



# PIPE CUTTING AND THREADING MACHINES



VSESOJUZNOJE EXPORTNO-IMPORTNOJE OBJEDINENIJE  
STANKOIMPORT

COUPLING BORING MACHINES  
COUPLING THREADING MACHINES  
COUPLING CUTTING-OFF MACHINES  
COUPLING SCREWING-ON MACHINES  
PIPE THREADING MACHINES  
PIPE CUTTING-OFF MACHINES

U S S R  
MOSCOW

This catalogue contains short specifications of the most common types of machine tools exported by the Vsesojuznoje Exportno-Importnoje Objedinenije "Stankoimport".

Detailed pamphlets sent on request.

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The Machine Tools produced in the USSR are outstanding for their high efficiency, convenience and safety in operation and long service.

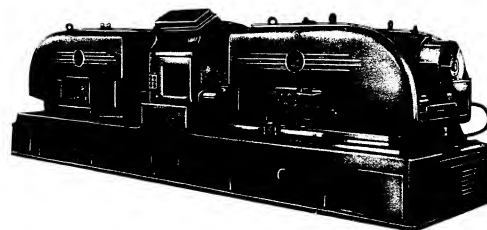
The first class material, perfect modern design and skilful workmanship provide accuracy, high efficiency and durability of the Machine Tools.

Steady improvement of machine tool design in the USSR aims at the increase of productivity, accuracy, reliability and dependability of machine in operation, as well as the reduction of operator's fatigue by improving and convenient placing of all operating controls and the all-increasing automatization of operation.

The Vsesojuznoje Exportno-Importnoje Objedinenije "Stankoimport" is able to offer a wide range of Machine Tools both universal and special types including Automatic Transfer Machines and Automatic Workshops.

## COUPLING BORING MACHINE

Model 9185



The 9185 Coupling Boring Machine is designed for two-side boring tapers, cylindrical recesses and facing couplings for casing pipes.

Machining of couplings is accomplished on both ends by special, combined, multi-tool holders. The blanks are gripped in a mechanized, self-centering chuck, which is driven by a separate electric motor.

The coupling boring tool holders, mounted on two spindle heads, are rotated and fed.

The spindle heads are provided with rapid approach, normal (first) and slowing down (second) working feeds until a dead stop is reached and rapid withdrawn — all these movements are obtained hydraulically.

The spindle speeds for each spindle head are obtained by an adjustable speed D. C. motor and a pair of pick-off gears.

The working cycle of the machine is completely automatic, requiring only that the operator load the machine, start the cycle and unload the finished part.

The rated production of the machine is as follows:

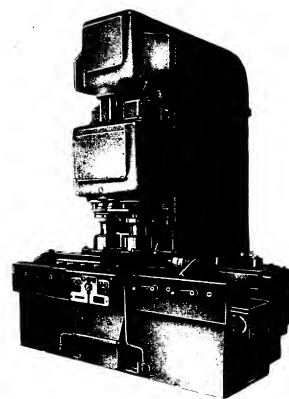
Coupling diameter  $7\frac{3}{4}$ " ..... 9 — 14 couplings per hour, depending on material

Coupling diameter  $16\frac{3}{4}$ " ..... 7 — 10.5 couplings per hour, depending on material.



## Drive

## TWO-SPINDLE VERTICAL COUPLING THREADING MACHINE



The machine can cut both right- and left-hand threads.



Centering, clamping and releasing of work pieces are accomplished mechanically and do not require any physical efforts from the operator.

In a fixture, mounted on rollers, are clamped four couplings. The required clamping force is predetermined, and is controlled by means of a pressure relay.

Alternately, each pair of couplings is in working position. After threading one end of the couplings the fixture is swivelled through an angle of 180° so that both the other ends can be threaded.

Travel of lifting tables, changing position of fixture, clamping and releasing of work pieces are effected by means of a hydro-mechanical system, controlled through hydraulic panels.

Loading of couplings is carried out during the working cycle of the machine.

The production of the machine (based on a cutting speed of 7 m/min) is as follows:

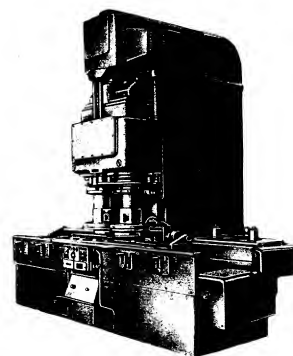
Coupling diameter 1 1/2" ..... 60 couplings per hour  
Coupling diameter 4 1/2" ..... 25 couplings per hour

#### SPECIFICATIONS

Capacity		Drive	
Number of spindles .....	2	Number of electric motors .....	4
Distance, spindle axis to bed ways, mm ..	200	Total power required, kW .....	14.2
Distance between spindles, mm .....	360	D. C. main drive motor:	
Number of couplings threaded simultaneously .....	2	Power, kW .....	5.8
Nominal diameter of couplings threaded, inches:		Speeds, r. p. m. .... 780 1500	
Minimum .....	1 1/2	220/380 volt, 3 phase, 50 cycle A. C.	
Maximum .....	4 1/2	motors:	
Maximum length threaded, mm .....	100	Rapid traverse:	
Threads per inch that can be cut .... 8 and 10		Power, kW .....	2.8
<b>Spindle Head</b>		Speed, r. p. m. .... 1500	
Maximum travel of spindle head, mm ..	200	Hydraulic pump:	
<b>Speeds and Feeds</b>		Power, kW .....	2.8
Range of spindle speeds, r. p. m. ... 11.4—55.2		Speed, r. p. m. .... 1000	
Number of spindle speeds at constant speed of main drive motor .....	3	Coolant pump:	
Die head feeds, mm/min:		Power, kW .....	2.8
Minimum .....	27	Speed, r. p. m. .... 1500	
Maximum .....	127	<b>Space Occupied</b>	
Rapid traverse speed of head, m/min ...	1.8	Floor space, mm .....	3000×2360
<b>Fixture</b>		Height of machine, mm .....	3210
Travel of fixture carriage, mm .....	760	<b>Weight</b>	
Traverse speed of fixture carriage, m/min .....	7	Net weight, kg .....	approx. 14000

## TWO-SPINDLE VERTICAL COUPLING THREADING MACHINE

Model 9B113



The 9B113 Two-Spindle Coupling Threading Machine is designed for cutting taper threads in couplings.

Threading is effected by revolving and feeding two special die heads with circular chasers. The chasers collapse automatically at the end of threading to enable a free return movement of the die heads.

Smooth change of die head spindle speeds is ensured by an adjustable speed D. C. motor through a speed gear box and pick-off gears.

Spindle rotation is from a spline shaft and helical gears.

The spindle head has both feed and rapid traverse movements. Feed changes are obtained by pick-off gears.

The working cycle of the machine is fully automatic.



The machine can cut both right- and left-hand threads.

Centering, clamping and releasing of work pieces are accomplished mechanically and do not require any physical efforts from the operator.

In a fixture, mounted on rollers, are clamped four couplings. The required clamping force is predetermined, and is controlled by means of a pressure relay.

Alternately, each pair of couplings is in working position. After threading one end of the couplings, the fixture is swivelled through an angle of 180° so that both the other ends can be threaded. Travel of lifting tables, changing position of fixture, clamping and releasing of work pieces are effected by means of a hydro-mechanical system, controlled through hydraulic panels.

Loading of couplings is accomplished during the working cycle of the machine.

The production of the machine (based on a cutting speed of 7 m/min) is as follows:

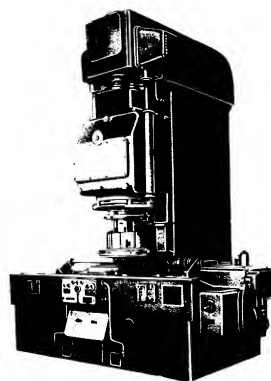
Coupling diameter 27/8" ..... 38.2 couplings per hour  
Coupling diameter 83/4" ..... 14 couplings per hour

#### SPECIFICATIONS

Capacity		Fixture	
Number of spindles .....	2	Travel of fixture carriage, mm .....	1000
Distance, spindle axis to bed ways, mm ..	360	Traverse speed of fixture carriage, m/min .....	5
Distance between spindles, mm .....	500		
Spindle Head		Drive	
Number of couplings threaded simultaneously .....	2	Number of electric motors .....	4
Nominal diameter of couplings threaded, inches:		Total power required, kW .....	16.9
Minimum .....	27/8	D. C. main drive motor:	
Maximum .....	83/4	Power, kW .....	8.5
Maximum length threaded, mm .....	98	Speeds, r. p. m. ....	780 1500
Threads per inch that can be cut ..... 8 and 10		220/380 volt, 3 phase, 50 cycle A. C. motors:	
Speeds and Feeds		Rapid traverse:	
Range of spindle speeds, r. p. m. .... 7.8—39.2		Power, kW .....	2.8
Number of spindle speeds at constant speed of main drive motor .....	3	Speed, r. p. m. ....	1500
Die head feeds, mm/min:		Hydraulic pump:	
Minimum .....	25	Power, kW .....	2.8
Maximum .....	121	Speed, r. p. m. ....	1000
Rapid traverse speed of head, m/min ..	1.8	Coolant pump:	
		Power, kW .....	2.8
		Speed, r. p. m. ....	1500
Space Occupied		Weight	
		Floor space, mm .....	3780×2520
		Height of machine, mm .....	3510
		Net weight, kg .....	approx. 16000

## VERTICAL COUPLING THREADING MACHINE

Model 9B115



The 9B115 Coupling Threading Machine is designed for cutting taper threads in couplings.

Threading is effected by revolving and feeding a special die head with circular chasers. The chasers collapse automatically at the end of threading to enable a free return movement of the die head.

Smooth change of the head spindle speeds is ensured by an adjustable speed D. C. motor through a speed gear box. Spindle rotation is from a spline shaft and helical gears.

The spindle head has both feed and rapid traverse movements.

Feed changes are obtained by pick-off gears.

The working cycle of the machine is fully automatic.

The machine can cut both right- and left-hand threads.



Centering, clamping and releasing of work piece are accomplished mechanically, and do not require any physical effort from the operator.

The machine is provided with two pneumatic hoists for easy loading and unloading of couplings.

In a fixture, mounted on rollers, are clamped two couplings simultaneously. The required clamping force is predetermined, and is controlled by means of a pressure relay.

Alternately, each coupling is in working position. After threading one end, the fixture is swivelled through an angle of 180° so that the other end can be threaded.

Travel of lifting tables, changing position of fixture, clamping and releasing of work piece are effected by means of a hydro-mechanical system, controlled through hydraulic panels.

Loading and unloading of couplings are accomplished during the working cycle of the machine.

The production of the machine (based on a cutting speed of 7 m/min) is as follows:

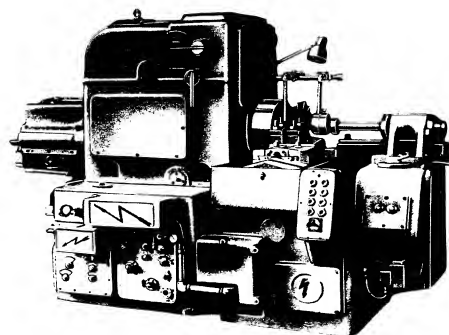
Coupling diameter 75/8" ..... 7.6 couplings per hour  
Coupling diameter 167/16" ..... 1.5 couplings per hour

#### SPECIFICATIONS

Capacity		Drive	
Number of spindles .....	1	Number of electric motors .....	4
Distance, spindle axis to bed ways, mm .....	320	Total power required, kW .....	16.9
Number of couplings threaded simultaneously .....	1	D. C. main drive motor:	
Nominal diameter of couplings threaded, inches:		Power, kW .....	8.5
Minimum .....	75/8	Speeds, r. p. m. ....	780—1500
Maximum .....	167/16	220-380 volt, 3 phase, 50 cycle A. C. motors:	
Maximum length threaded, mm .....	115	Rapid traverse:	
Threads per inch that can be cut .....	6 and 8	Power, kW .....	2.8
<b>Spindle Head</b>		Speed, r. p. m. ....	1500
Maximum travel of head, mm .....	280	Hydraulic pump:	
<b>Speeds and Feeds</b>		Power, kW .....	2.8
Range of spindle speeds, r. p. m. ....	5.2—25	Speed, r. p. m. ....	1000
Number of spindle speeds at constant speed of main drive motor .....	3	Coolant pump:	
Feeds of die heads, mm/min:		Power, kW .....	2.8
Minimum .....	16	Speed, r. p. m. ....	1500
Maximum .....	103	<b>Space Occupied</b>	
Rapid traverse speed of head, m/min .....	1.8	Floor space, mm .....	3430×2545
<b>Fixture</b>		Height of machine, m .....	3805
Travel of fixture carriage, mm .....	750	<b>Weight</b>	
Traverse speed of fixture carriage, m/min .....	5	Net weight, kg .....	approx. 17000

### COUPLING CUTTING-OFF MACHINE

Model 9162



The 9162 Coupling Cutting-off Machine is designed for cutting off coupling blanks for pipes.

The cutting-off operation is effected by two pairs of cut-off tools, which, mounted on the front and rear cross slides, cut off two couplings from the pipe simultaneously.

The working cycle of the machine is fully automatic.

The pipe to be cut off, which passes through a hollow spindle up to a stop, is gripped by a collet chuck and rotates with the spindle, then the stop recedes to its starting position, the tool slides are fed and cut off the couplings. After the cutting-off operation, the tool slides return to their starting position, the chuck opens, the stop moves back to its working position, the pipe is again fed to the stop and a new cycle is started.

Pipe gripping by collet chucks, pipe clamping by feed rollers and feed of cut-off tool slides are obtained hydraulically. The pipe is fed through the spindle mechanically.

Spindle speeds are set by two shifting levers; when necessary, added speed changes can be obtained with pick-off gears.

The production of the machine is as follows:

Coupling size 55×7.5 mm (1 1/8") ..... 134 couplings per hour  
Coupling size 140×21.5 mm (4 1/2") ..... 48 couplings per hour



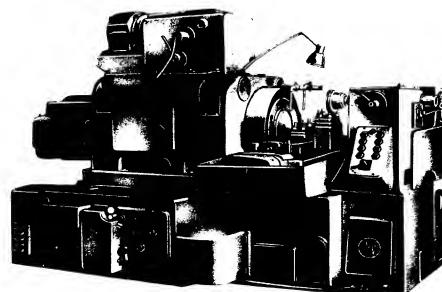


## SPECIFICATIONS

Capacity		Drive	
Distance, spindle axis to machine base, mm	1100	220 380 volt, 3 phase, 50 cycle A. C. motors:	
Distance, chuck face to first pair of cut-off tools, mm	35	Main drive:	
Distance, chuck face to feed rollers, mm	1395	Power, kW	10
Number of couplings cut off simultaneously	2	Speed, r. p. m.	1000
Range of coupling outside diameters:		Hydraulic pump:	
In millimeters	48—111	Power, kW	2.8
Nominal, in inches	1 1/2—4 1/2	Speed, r. p. m.	1000
<b>Cutting-off Tool Slides</b>		Coolant pump:	
Number of tool slides	2	Power, kW	0.125
Distance between cut-off tools (along spindle axis), mm	20—220	Speed, r. p. m.	3000
Maximum travel of each slide, mm	75	Lubricating pump:	
		Power, kW	0.6
		Speed, r. p. m.	1500
<b>Speeds and Feeds</b>		<b>Space Occupied</b>	
Number of spindle speeds	11	Floor space, mm	2800×1565
Range of spindle speeds, r. p. m.	36.5—374	Height of machine, mm	1895
Range of feeds of tool slides (infinitely variable), mm/min	10—80	<b>Weight</b>	
		Net weight, kg	approx. 7050

## COUPLING CUTTING-OFF MACHINE

Model 9F163C1



The 9F163C1 Coupling Cutting-off Machine is designed for cutting off coupling blanks for pipes.

The cutting off operation is effected by two pairs of cut-off tools, which, mounted on the front and rear cross slides cut off two couplings from the pipe simultaneously.

The working cycle of the machine is fully automatic.

The pipe to be cut off, which passes through a hollow spindle up to a stop, is gripped by a collet chuck and rotates with the spindle, then the stop recedes to its starting position, the tool slides are fed and cut off the couplings. After the cutting-off operation, the tool slides return to their starting position, the chuck opens, the stop moves back to its initial working position, the pipe is again fed to the stop and a new cycle is started.

Pipe gripping by collet chuck, pipe clamping by feed rollers and feed of cut-off tools slides are obtained hydraulically.

The pipe is fed through the spindle mechanically.

Spindle speeds are set by two shifting levers; when necessary, added speed changes can be obtained with pick-off gears.

The production of the machine is as follows:

Coupling size 55 × 7.5 mm (1 1/2")	116 couplings per hour
Coupling size 243 × 21.5 mm (8 3/8")	28 couplings per hour

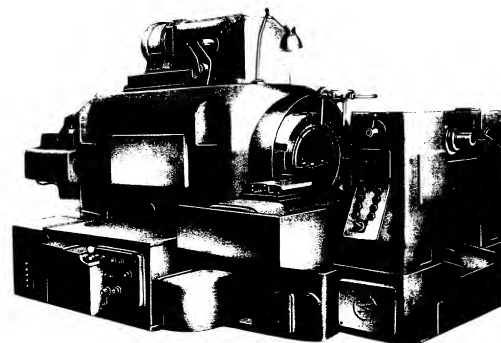


## SPECIFICATIONS

Capacity		Drive	
Distance, spindle axis to machine base, mm	1100	220-380 volt, 3 phase, 50 cycle A. C. motors:	
Distance, chuck face to first pair of cut-off tools, mm	35	Main drive:	
Distance, chuck face to feed rollers, mm	1615	Power, kW	10
Number of couplings cut off simultaneously	2	Speed, r. p. m.	1000
Range of coupling outside diameters:		Hydraulic pump:	
In millimeters	55-250	Power, kW	2.8
Nominal, in inches	1 1/2-8 3/4	Speed, r. p. m.	1000
Cutting-off Tool Slides		Coolant pump:	
Number of slides	2	Power, kW	0.15
Distance between cut-off tools (along spindle axis), mm	20-215	Speed, r. p. m.	3000
Maximum travel of each slide, mm	150	Lubricating pump:	
Speeds and Feeds		Power, kW	0.6
Number of spindle speeds	10	Speed, r. p. m.	1000
Range of spindle speeds, r. p. m.	21.1-195	Space Occupied	
Range of feeds of tool slides (infinitely variable), mm/min	5-50	Floor space, mm	3250 x 2030
		Height of machine, mm	2170
Weight			
		Net weight, kg	approx. 11300

## COUPLING CUTTING-OFF MACHINE

Model 9167



The 9167 Coupling Cutting-off Machine is designed for cutting off coupling blanks for pipes.

The cutting-off operation is effected by two pairs of cut-off tools, which, mounted on the front and rear cross slides, cut off two couplings from the pipe simultaneously.

The working cycle of the machine is fully automatic.

The pipe to be cut off, which passes through a hollow spindle up to a stop, is gripped by a collet chuck and rotates with the spindle; then the stop recedes to its starting position, the tool slides are fed and cut off the couplings.

After the cutting-off operation, the tool slides return to their starting position, the chuck opens, the stop moves back to its initial working position, the pipe is again fed to the stop and a new cycle is started.

Pipe gripping by collet chuck, pipe clamping by feed rollers and feed of cut-off tool slides are obtained hydraulically.



The pipe is fed through the spindle mechanically.

Spindle speeds are set by two shifting levers; when necessary, added speed changes can be obtained with pick-off gears.

The production of the machine is as follows:

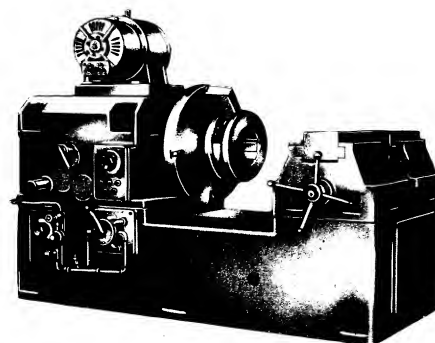
Coupling size 136 × 21 mm (5 1/4 × 1 1/8") ..... 14 couplings per hour  
Coupling size 151 × 24.5 mm (6 × 1 1/8") ..... 18 couplings per hour

#### SPECIFICATIONS

Capacity	Drive
Distance, spindle axis to machine base, mm ..... 1100	220-380 volt, 3 phase, 50 cycle A. C. motors:
Distance, chuck face to first pair of cut-off tools, mm ..... 35	Main drive:
Distance, chuck face to feed rollers, mm ..... 2225	Power, kW ..... 11
Number of couplings cut off simultaneously ..... 2	Speed, r. p. m. ..... 1000
Range of coupling outside diameters: In millimeters ..... 136-151	Hydraulic pump:
Nominal in inches ..... 5 1/4-6 × 1	Power, kW ..... 2.8
	Speed, r. p. m. ..... 1000
	Coolant pump:
	Power, kW ..... 0.15
	Speed, r. p. m. ..... 3060
	Lubricating pump:
	Power, kW ..... 0.6
	Speed, r. p. m. ..... 1000
	Space Occupied
	Floor space, mm ..... 3900 × 2370
	Height of machine, mm ..... 2325
	Weight
	Net weight, kg ..... approx. 16600

#### COUPLING SCREWING-ON MACHINE

Model 9B173



The 9B173 Coupling Screwing-on Machine is designed for screwing couplings on pipes.

The pipe, with the coupling preliminarily screwed on by hand, is clamped in a pneumatic vise.

The coupling is gripped in interchangeable, movable, lever-type chucks which are set in the spindle.

Four sizes of interchangeable chucks are used for the whole range of couplings to be screwed on.

The chuck spindle speeds are set by an adjustable speed D. C. motor and cluster gears of a speed gear box.

The machine can be arranged for screwing out the coupling from the pipe by a simple set-up.

The machine is controlled by push buttons and a hand-operated pneumatic valve.

The rated production of the machine is as follows:

Pipe joint diameter 1 1/2" ..... 95 pieces per hour  
Pipe joint diameter 8 3/4" ..... 65 pieces per hour

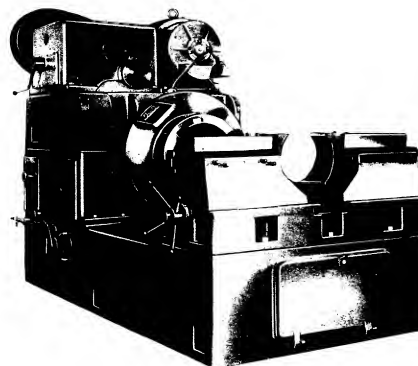


## SPECIFICATIONS

Capacity		Speeds	
Distance, coupling axis to machine base, mm	1100	Range of spindle speeds, r. p. m.	9 - 37
Maximum travel of each jaw of pipe vise, mm	30	Drive	
Maximum longitudinal travel of coupling gripping chuck, mm	100	D. C. electric motor for spindle drive:	
Range of nominal diameters of screwed joint of pipe and coupling, inches 1 1/2 - 8 1/2		Voltage, V	220; 110
Range of outside diameters of pipes held in vise, mm	33.5 - 219	Power, kW	8.5; 9.5
Range of outside diameters of couplings held in chucks, mm	34 - 65; 73 - 103; 111 - 171; 188 - 243	Speeds, r. p. m.	780 - 1560
		Air pressure in mains, atm	1
		Space Occupied	
		Floor space, mm	2350 - 1350
		Height of machine, mm	2080
		Weight	
		Net weight, kg	approx. 8000

## COUPLING SCREWING-ON MACHINE

Model 9B175



The 9B175 Coupling Screwing-on Machine is designed for screwing couplings on pipes.

The pipe, with the coupling preliminarily screwed on by hand, is clamped in a pneumatic vise.

The coupling is gripped in interchangeable, movable, lever-type chucks, which are set in the spindle.

Four sizes of interchangeable chucks are used for the whole range of couplings to be screwed on.

The chuck spindle speeds are set by an adjustable speed D. C. motor and a speed gear box.

The machine can be arranged for screwing out the coupling from the pipe by a simple set-up.

The machine is controlled by push buttons and a hand-operated pneumatic valve.

The rated production of the machine is as follows:

Pipe joint diameter 4 3/4" ..... 80 pieces per hour

Pipe joint diameter 16 3/4" ..... 40 pieces per hour

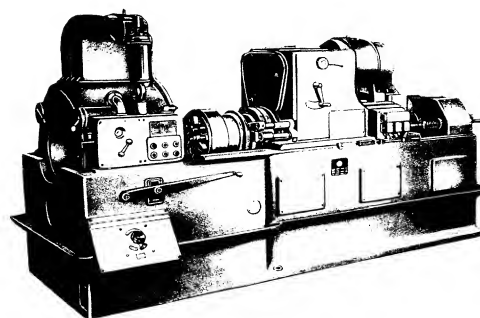


## SPECIFICATIONS

Capacity		Speeds
Distance, coupling axis to machine base, mm	1100	Range of spindle speeds, r. p. m. .... 5.3 - 15
Maximum travel of each jaw of pipe vise, mm	10	<b>Drive</b>
Maximum longitudinal travel of coupling gripping chucks, mm	60	D. C. electric motor for spindle drive:
Range of nominal diameters of screwed joint of pipe and coupling, inches 1 1/2 - 16 3/4		Voltage, V ..... 220; 110
Range of outside diameters of pipes, held in vise, mm	111 - 126	Power, kW ..... 30; 28.5
Ranges of outside diameters of couplings, held in chucks, mm	136 - 171; 188 - 213; 269 - 351; 376 - 451	Speeds, r. p. m. .... 1000 - 1650; 975 - 1650
		Air pressure in mains, atm ..... 1
		<b>Space Occupied</b>
		Floor space, mm ..... 3110 - 1720
		Height of machine, mm ..... 2445
		<b>Weight</b>
		Net weight, kg ..... approx. 11500

## PIPE THREADING MACHINE

Model 9B143



The 9B143 Pipe Threading Machine is designed for cutting taper threads on pipes.

The pipe to be threaded is clamped in a stationary chuck. Threading is effected by a special rotary die head with circular chasers, which are automatically opened at the end of the feed movement.

Spindle speeds, with the die head bolted on, are changed by D. C. motor through the speed gear box and pick-off gears.

The spindle headstock has working and rapid power feeds. Power feeds are obtained by pick-off gears.

The working cycle of the machine is automatic.

The production of the machine for pipes 1 1/2" is 57 pipe ends per hour, and for pipes 8 3/8" is 16 pipe ends per hour.

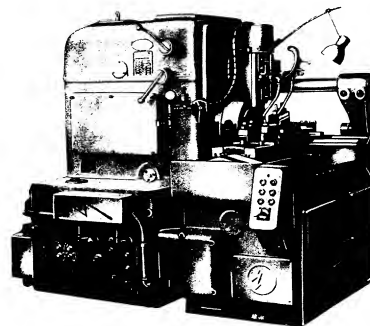




Maximum travel of tool slide, mm	250	
Maximum tool slide travel, mm	260	
Length of taper turned at one setting, mm	120	
Maximum taper	2.10	
<b>Spindle</b>		
Hole diameter in spindle, mm	310	
<b>Speeds and Feeds</b>		
Number of spindle speeds	12	
Range of spindle speeds (forward rotation), r. p. m.	5.3	255
Number of longitudinal and cross feeds of slide	18	
Range of slide feeds, mm per revolution of spindle:		
Longitudinal	0.22	1.56
Cross	0.08	0.6
<b>Drive</b>		
220-380 volt, 3 phase, 50 cycle A. C. motors:		
Main drive:		
Power, kW	11	
Speed, r. p. m.	1500	
Chuck clamping drive:		
Power, kW	1.7	
Speed, r. p. m.	1500	
Coolant pump:		
Power, kW	0.125	
Speed, r. p. m.	3060	
<b>Space Occupied</b>		
Floor space, mm	5865	1800
Height of machine, mm	1545	
<b>Weight</b>		
Net weight, kg	approx. 8100	

## PIPE CUTTING-OFF MACHINE

Model 9152



The 9152 Pipe Cutting-off Machine is designed for cutting off pipe ends, chamfering the outside diameter and removing burrs on the inside diameter of pipes.

Cutting off is effected by two simultaneously operating cut-off tools, which are mounted on the front and rear cross slides.

The chamfering operation is by a tool mounted on a special slide.

The pipe to be cut off passes through a hollow spindle and is gripped by a collet chuck which rotates with the spindle.

Gripping of pipe and feeding of cut-off tools are effected hydraulically; feed of chamfering tool is by pneumatic means.

Spindle speed changes are obtained by two shifting levers; when necessary, added speed changes can be obtained with pick-off gears.

A hand-lever-operated fixture for removing burrs on the inside of the pipe is mounted on the front tool slide.

The machine is fitted with a collapsible and adjustable stock stop.

The production of the machine is as follows:

Pipe size 38 × 3 mm ..... 103 pipe ends per hour  
Pipe size 152 × 13 mm ..... 40 pipe ends per hour

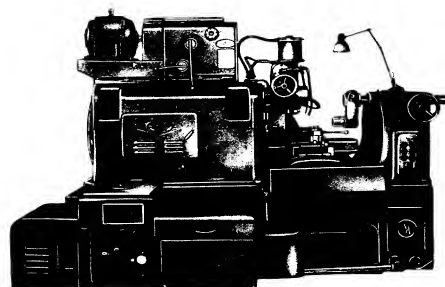


## SPECIFICATIONS

Capacity	Drive
Distance, spindle axis to machine base, mm ..... 1100	220-380 volt, 3 phase, 50 cycle A. C. motors:
Distance, chuck face to cut-off tools, mm ..... 35-265	Main drive:
Distance, chuck face to rear face of spindle, mm ..... 1175	Power, kW ..... 10
Range of pipe outside diameters, mm ..... 38-152	Speed, r. p. m. .... 1000
Range of pipe lengths admitted when working with stop, mm ..... 100-450	Hydraulic pump:
	Power, kW ..... 2.8
	Speed, r. p. m. .... 1000
	Coolant pump:
	Power, kW ..... 0.125
	Speed, r. p. m. .... 3000
	Lubricating pump:
	Power, kW ..... 0.6
	Speed, r. p. m. .... 1500
	Space Occupied
	Floor space, mm ..... 2150 x 1565
	Height of machine, mm ..... 1895
	Weight
	Net weight, kg ..... approx. 6400

## PIPE CUTTING-OFF MACHINE

Model 9F153C1



The 9F153C1 Pipe Cuttings-off Machine is designed for cutting off pipe ends, chamfering the outside diameter and removing burrs on the inside diameter of pipes.

Cutting off is effected by two simultaneously operating cut-off tools, which are mounted on the front and rear cross slides.

The chamfering operation is by a tool mounted on a special slide.

The pipe to be cut off passes through a hollow spindle and is gripped by a collet chuck which rotates with the spindle.

Gripping of pipe and feeding of cut-off tools are effected hydraulically; feed of chamfering tool is by pneumatic means.

Spindle speed changes are obtained by two shifting levers; when necessary, added speed changes can be obtained with pick-off gears.

A hand-lever-operated fixture for removing burrs on the inside of the pipe is mounted on the front tool slide.

The machine is fitted with a collapsible and adjustable stock stop.

The production of the machine is as follows:

Pipe size 48 x 4 mm .....	77 pipe ends per hour
Pipe size 219 x 12.5 mm .....	29 pipe ends per hour

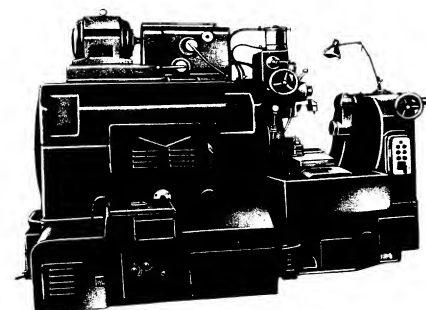




## SPECIFICATIONS

Drive	
220-380 volt, 3 phase, 50 cycle A.C. motor:	
Main drive:	
Power, kW	10
Speed, r. p. m.	1600
Hydraulic pump:	
Power, kW	2.8
Speed, r. p. m.	1000
Coolant pump:	
Power, kW	0.15
Speed, r. p. m.	3600
Lubricating pump:	
Power, kW	0.6
Speed, r. p. m.	1000
Space Occupied	
Floor space, mm	3360
Height of machine, mm	2170
Weight	
Net weight, kg	approx. 10530

## PIPE CUTTING-OFF MACHINE

**Model 9157**

The 9157 Pipe Cutting-off Machine is designed for cutting off pipe ends, chamfering the outside diameter and removing burrs on the inside diameter of pipes.

Cutting off is effected by two simultaneously operating cut-off tools, which are mounted on the front and rear cross slides.

The chamfering operation is by a tool mounted on a special slide.

The pipe to be cut off passes through a hollow spindle and is gripped by a collet chuck which rotates with the spindle.

Gripping of pipe and feeding of cut-off tools are effected hydraulically; feed of chamfering tool is by pneumatic means.

Spindle speed changes are obtained by two shifting levers; when necessary, added speed changes can be obtained with pick-off gears.

A hand-lever-operated fixture for removing burrs on the inside of the pipe is mounted on the front tool slide.

The machine is fitted with a collapsible and adjustable stock stop.

The production of the machine is as follows:

Pipe size 11 1/8 x 9.5 mm .....	44 pipe ends per hour
Pipe size 126 x 12 mm .....	20 pipe ends per hour



## SPECIFICATIONS

Capacity		Drive	
Distance, spindle axis to machine base, mm		220-380 volt, 3 phase, 50 cycle A. C. motors:	
.....		Main drive:	
.....		Power, kW	14
Distance, face of chuck to cut-off tools, mm		Speed, r. p. m.	1000
..... 35	290	Hydraulic pump:	
Distance, face of chuck to rear face of spindle, mm		Power, kW	2.8
..... 2015		Speed, r. p. m.	1000
Range of pipe outside diameters, mm		Coolant pump:	
..... 111	126	Power, kW	0.15
Range of pipe lengths admitted when working with stop, mm		Speed, r. p. m.	3000
..... 200	500	Lubricating pump:	
		Power, kW	0.6
		Speed, r. p. m.	1000
Cut-off Tool Slides		Space Occupied	
Number of slides		Floor space, mm	3625 x 2370
..... 2		Height of machine, mm	2325
Maximum travel of each slide, mm		Weight	
..... 180		Net weight, kg	
		..... approx. 15450	
Speeds and Feeds			
Number of spindle speeds			
..... 10			
Range of spindle speeds, r. p. m.			
..... 19.4	135.2		
Range of feeds of cut-off slides (infinitely variable), mm/min			
..... 5	35		

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Design and specifications of the machine tools illustrated herein are subject to change without notice.



**STANKOIMPORT**

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MACHINES  
MULTIPLE SPINDLE AUTOMATIC  
CHUCKING MACHINES  
TURRET LATHES  
VERTICAL BORING AND TURNING MILLS  
LATHES  
MULTITool SEMI-AUTOMATIC LATHES  
ROLL TURNING LATHES  
RELIEVING LATHES  
MULTITool SEMI-AUTOMATIC CRANK-  
SHAFT LATHES  
MULTITool SEMI-AUTOMATIC CAMSHAFT  
LATHES

VSESOJUZOJE EXPORTNO-IMPORTNOJE OBJEDINENIJE

**STANKOIMPORT**

U S S R

MOSCOW

This catalogue contains short specifications of the most common types of machine tools exported by the Vsesojuznoje Exportno-Importnoje Objedinenije "Stankoimport".

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All inquiries and correspondence to be forwarded to:

**Vsesojuznoje Exportno-Importnoje Objedinenije  
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The Machine Tools produced in the USSR are outstanding for their high efficiency, convenience and safety in operation and long service.

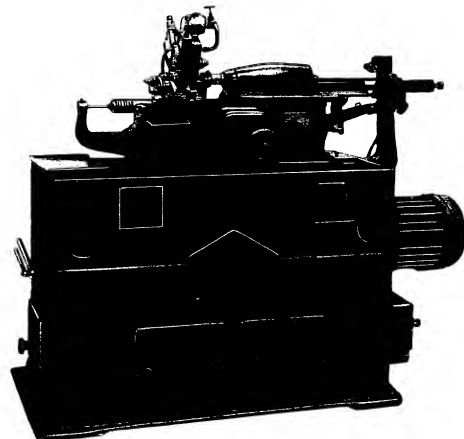
The first class material, perfect modern design and skilful workmanship provide accuracy, high efficiency and durability of the Machine Tools.

Steady improvement of machine tool design in the USSR aims at the increase of productivity, accuracy, reliability and dependability of machine in operation, as well as the reduction of operator's fatigue by improving and convenient placing of all operating controls and the all-increasing automatization of operation.

The Vsesojuznoje Exportno-Importnoje Objedinenije "Stankoimport" is able to offer a wide range of Machine Tools both universal and special types including Automatic Transfer Machines and Automatic Workshops.

## **SINGLE SPINDLE AUTOMATIC SCREW MACHINE**

**MODEL 110II**



The 110II Single Spindle Automatic Screw Machine is designed for machining relatively long and slender parts from bar stock. The work is turned by a combined radial in-feed of the tools and axial feed of the rotating bar past the tools. The rotating bar is fed through the guide bushing to the tools by weight.

Five individually fed tools are carried by the stationary tool head. All movements of the headstock and tools are controlled by cams.

The cutting action, regardless of the length of the piece to be machined, always take place directly in front of the guide bushing and thus finely finished long and slender parts can be produced. One part is produced for one turn of the camshaft.



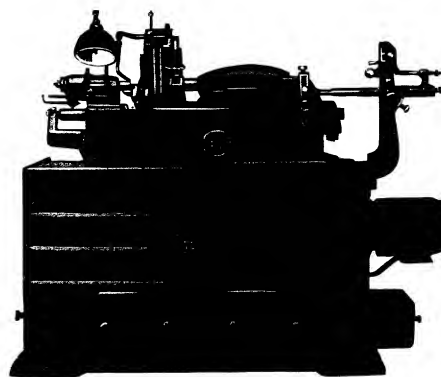
Spindle speeds and camshaft speeds are controlled by change gears.  
The machine stops automatically, at the end of machining of each bar.  
Such operations as drilling or threading are performed by the use of auxiliary attachments individually driven.

#### SPECIFICATIONS

<b>Capacity</b>		Range of spindle speeds, r.p.m. . . . . 890—6000
Bar capacity, mm . . . . .	7	Range of camshaft speeds, r.p.m. 0.28—60.7
Maximum turning length, mm . . . . .	50	<b>Drive</b>
Maximum drill diameter, mm . . . . .	4	220/380 volt, 3 phase, 50 cycle A.C. motor:
Maximum drill depth, mm . . . . .	30	power, kW . . . . . 1.7
Maximum threading diameter in steel, mm . . . . .	5	speed, r.p.m. . . . . 1500
Maximum threading length in steel, mm . . . . .	30	<b>Space Occupied</b>
<b>Speeds and Feeds</b>		Floor space, mm . . . . . 1700×650
Number of spindle speeds . . . . .	13	Height of machine, mm . . . . . 1400
		<b>Weight</b>
		Net weight, kg . . . . . approx. 1000

### SINGLE SPINDLE AUTOMATIC SCREW MACHINE

MODEL 112



The 112 Single Spindle Automatic Screw Machine is designed for machining relatively long and slender parts from bar stock. The work is turned by a combined radial in-feed of the tools and axial feed of the rotating bar past the tools. The rotating bar is fed through the guide bushing to the tools by the sliding headstock.

Four individually fed tools are carried by the stationary tool head. All movements of the headstock and tools are controlled by cams. By a combination of headstock and tool movements almost any angle or form can be produced without forming tools.

The cutting action, regardless of the length of the piece to be machined, always take place directly in front of the guide bushing and thus finely finished long and slender parts can be produced. One part is produced for one turn of the camshaft.

Spindle speeds and camshaft speeds are controlled by change gears.





The machine stops automatically, at the end of machining of each bar. Should the spindle drive belt break during machine operation, a limit switch causes the machine to stop.

Such operations as drilling or threading are performed by the use of auxiliary attachments individually driven.

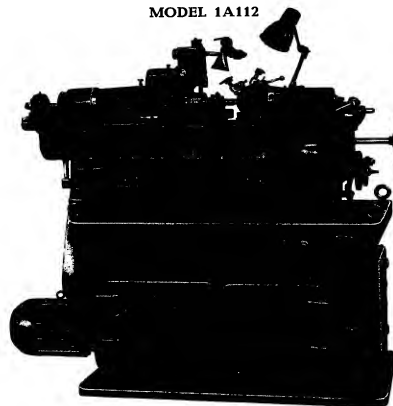
#### SPECIFICATIONS

Capacity		Distance from the radially operated tool bit side to the spindle nose, mm:	
Bar capacity, mm:		minimum	1
round (diameter)	12	maximum	5
square (side)	8.5		
hexagon (distance between sides)	10.4		
Maximum turning length (length of feed), mm:			
with bell cam	100	Number of spindle speeds	16
with plate cam	80	Range of spindle speeds, r.p.m.	800—7670
Maximum bar length, mm	3000—3500	Number of camshaft speeds for each spindle speed	44
Maximum drill diameter, mm	8	Nominal number of camshaft speeds	704
Maximum drill depth, mm	30	Range of machine production, parts per minute	0.1—32
Threading diameter in brass, mm:		Range of production cycles, sec	2—600
minimum	3		
maximum	8		
Maximum threading diameter in steel, mm	6		
Cross Slides			
Number of cross slides:			
rocker operated	2		
radially operated	2		
Distance from the rocker operated tool bit side to the spindle nose, mm:			
minimum	1		
maximum	5		

Speeds and Range of Production	
Number of spindle speeds	16
Range of spindle speeds, r.p.m.	800—7670
Number of camshaft speeds for each spindle speed	44
Nominal number of camshaft speeds	704
Range of machine production, parts per minute	0.1—32
Range of production cycles, sec	2—600
Drive	
220/380 volt, 3 phase, 50 cycle A.C. motor:	
power, kW	2.2
speeds, r.p.m.	1500
Space Occupied	
Floor space, mm	1410×570
Height of machine, mm	1500
Weight	
Net weight, kg	approx. 1450

## SINGLE SPINDLE BAR AUTOMATIC MACHINE

MODEL 1A112



The 1A112 Single Spindle Bar Automatic Machine is designed for machining of relatively complicated parts from bar which require a series of successive operations such as turning, boring, internal and external threading, etc., and for machining by means of form tools.

The machine is particularly adapted for lot and mass production.

Cutting tools are mounted in six positions of hexagon turret and on front, rear and vertical slides. Besides milling, drilling and other attachments can be mounted on the machine.

Machine set-up for producing of different parts is accomplished by means of change cams.

#### SPECIFICATIONS

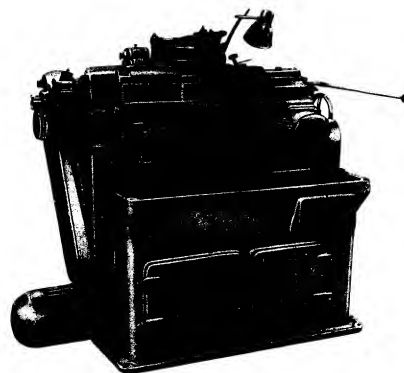
Capacity		Maximum bar feed, mm	
Bar capacity, mm:		Maximum turning length, mm	60
round (diameter)	12	Maximum diameter of thread cut, mm:	50
hexagon (distance between sides)	10	in steel	8
square (side)	9	in brass	10



Slides and Turret Head		Range of camshaft speeds, r.p.m. 0.33—30
Number of slides	3	Range of production cycles, sec. . . 2—180
Maximum cross traverse of slide, mm	32	
Diameter of turret head, mm	100	
Maximum traverse of turret head, mm	50	
Distance, end of spindle to turret head, mm:		
minimum	65	
maximum	135	
Speeds and Feeds		
Number of spindle speeds	16	
Range of spindle speeds, r.p.m.:		
turning	1090—5040	
thread cutting	183—860	
		Drive
		220/380 volt, 3 phase, 50 cycle A.C. motor;
		power, kW . . . . . 2.8
		speed, r.p.m. . . . . 1500
		Space Occupied
		Floor space, mm . . . . . 1540×625
		Height of machine, mm . . . . . 1355
		Weight
		Net weight, kg . . . . . approx. 950

## SINGLE SPINDLE BAR AUTOMATIC MACHINE

### MODEL 1A118



The 1A118 Single Spindle Bar Automatic Machine is designed for machining of relatively complicated parts from bar which require a series of successive operations such as turning, boring, internal and external threading, etc., and for machining by means of form tools.

The machine is particularly adapted for lot and mass production.

Cutting tools are mounted in six positions of hexagon turret and on front, rear and vertical slides. Besides milling, drilling and other attachments can be mounted on the machine.

Machine set-up for producing of different parts is accomplished by means of change cams.

#### SPECIFICATIONS

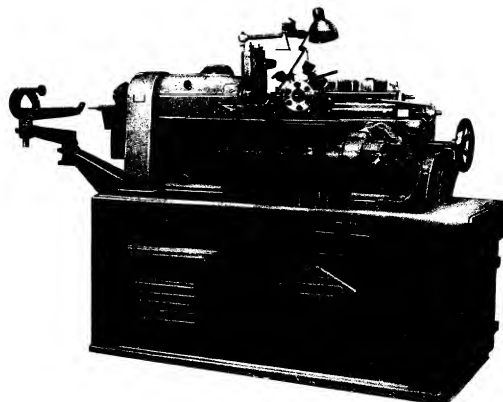
Capacity		Maximum bar feed, mm	60
Bar capacity, mm:		Maximum turning length, mm	50
round (diameter)	18	Maximum diameter of thread cut, mm:	
hexagon (distance between sides)	15	in steel	10
square (side)	13	in brass	12



Slides and Turret Head		Range of production cycles, sec. ... 3—180	
Number of slides .....	3	<b>Drive</b>	
Maximum cross traverse of slide, mm .....	32	220/380 volt, 3 phase, 50 cycle A.C. motor:	
Diameter of turret head, mm .....	100	power, kW .....	
Maximum traverse of turret head, mm .....	50	speed, r.p.m. ....	
<b>Speeds and Feeds</b>		<b>Space Occupied</b>	
Number of spindle speeds .....	16	Floor space, mm .....	
Range of spindle speed, r.p.m.: .....		Height of machine, mm .....	
turning .....	866—4024	<b>Weight</b>	
thread cutting .....	146—684	Net weight, kg .....	
Range of camshaft speeds, r.p.m. 0.33—20		approx. 950	

## SINGLE SPINDLE BAR AUTOMATIC MACHINE

MODEL 1A124



The 1A124 Single Spindle Bar Automatic Machine is designed for machining relatively complicated parts from bar which require a series of successive operations such as turning, boring, internal and external threading, etc., and for machining by means of form tools. The machine is particularly adapted for lot and mass production.

Cutting tools are mounted in six positions of hexagon turret and on front, rear and vertical slides.

Spindle of the machine is driven by a direct current motor. Speed of spindle is infinitely variable. Electrical control of spindle speeds makes possible changing of speed and direction of spindle rotation at each turret indexing.



Mechanisms of bar feeding and clamping, indexing of the turret head, rotation of camshaft and coolant pump are driven from a separate electric motor.

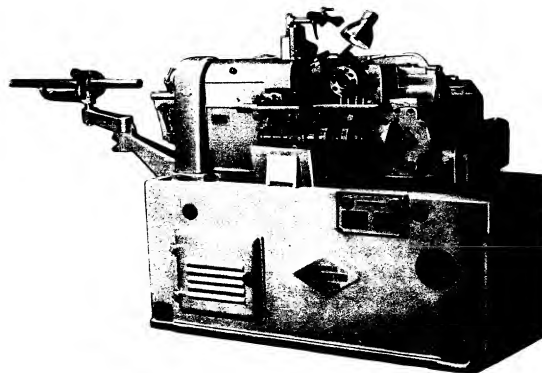
Machine set-up for producing of different parts is accomplished by means of change cams.

#### SPECIFICATIONS

Capacity		Distance, end of spindle to turret head, mm:	
Bar capacity, mm:		minimum	64
round (diameter)	25	maximum	180
hexagon (distance between sides), mm	20	<b>Speeds and Feeds</b>	
square (side)	17	Range of infinitely variable spindle speeds, r.p.m.	110—2800
Maximum bar feed, mm	90	Range of camshaft speeds, r.p.m.	0.125—7.4
Maximum turning length, mm	80	<b>Drive</b>	
Maximum diameter of thread cut, mm:		Direct current electrical motor:	
in steel	18	power, kW	4.2
in brass	22	speed, r.p.m.	2200
<b>Slides and Turret Head</b>		<b>Space Occupied</b>	
Number of slides	3	Floor space, mm	2000×800
Maximum cross traverse of slide, mm	40	Height of machine, mm	1500
Diameter of turret head, mm	140	<b>Weight</b>	
Maximum traverse of turret head, mm	80	Net weight, kg	approx. 2000

## SINGLE SPINDLE BAR AUTOMATIC MACHINE

MODEL 1A136



The 1A136 Single Spindle Bar Automatic Machine is designed for machining relatively complicated parts from bar which require a series of successive operations such as turning, boring, internal and external threading etc., and for machining by means of form tools. The machine is particularly adapted for lot and mass production.

Cutting tools are mounted in six positions of hexagon turret and on front, rear and vertical slides.

Spindle of the machine is driven by a direct current motor. Speed of spindle is infinitely variable. Electrical control of spindle speeds makes possible changing of speed and direction of spindle rotation at each turret indexing.



Mechanisms of bar feeding and clamping, indexing of the turret head, rotation of camshaft and coolant pump are driven from a separate electric motor.

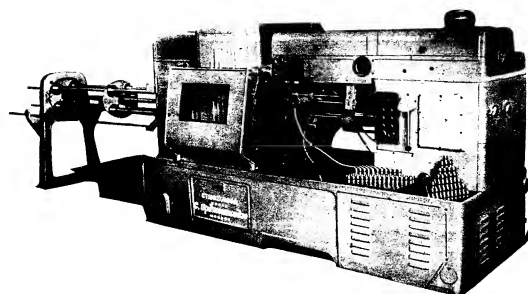
Machine set-up for producing of different parts is accomplished by means of change cams.

#### SPECIFICATIONS

Capacity		Distance, end of spindle to turret head, mm:	
Bar capacity, mm:		minimum	64
round (diameter)	36	maximum	180
hexagon (distance between sides), mm	30	<b>Speeds and Feeds</b>	
square (side)	25	Range of infinitely variable spindle speed, r.p.m.	
Maximum bar feed, mm	90	100—2000	
Maximum turning length, mm	80	Range of camshaft speeds, r.p.m. 0.125—5.2	
Maximum diameter of thread cut, mm:		<b>Drive</b>	
in steel	22	Direct current electrical motor:	
in brass	27	power, kW	
		speed, r.p.m.	
		4.2	
		2200	
<b>Slides and Turret Head</b>		<b>Space Occupied</b>	
Number of slides	3	Floor space, mm	
Maximum cross traverse of slide, mm	40	2000×800	
Diameter of turret head, mm	140	Height of machine, mm	
Maximum traverse of turret head, mm	80	1500	
		<b>Weight</b>	
		Net weight, kg	
		approx. 2000	

### FOUR SPINDLE BAR AUTOMATIC MACHINE

MODEL 1240-4



The 1240-4 Bar Automatic Machine is designed for machining parts from metal bars which require a series of successive operations such as turning, drilling, reaming, threading, facing, cutting-off, etc. The work is machined simultaneously in the four spindles of the rotary spindle block.

The cutting tools are clamped in toolholders, and in the fixtures mounted in four positions of the main tool slide and on the four cross slides. The attachment for high speed drilling can be arranged in any of the positions.

The speeds of work and tool spindles are selected through change gears.

The feeds of the main tool slide and cross tool slides, as well as the fixtures with independent feeds are also selected through change gears.

The length of main slide travel and the travel of the fixtures with independent feeds can be varied by regulating the quadrant linkage mechanism without changing cams.

Cross slides travel can be varied by regulating the quadrant linkage mechanism and by using four changeable cams.

The machine operates on an automatic cycle, comprising: rapid approach of tool slides to work spindles, feeds of tool slides, rapid return of tool slides, indexing of spindle block, swinging of stock-stop to working position, feed of stock to stock-stop and gripping of stock. One revolution of the camshaft corresponds to the machining of one work piece.



The machine has a special electric drive for reducing the speed of the camshaft during setting-up operations.

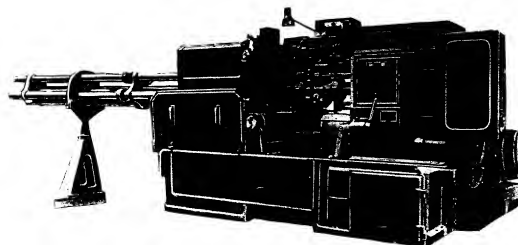
Chips are removed from the bed of the machine by means of a screw chip conveyor.

#### SPECIFICATIONS

Capacity		Minimum and maximum travel of fixtures with independent feed, mm:	
Maximum bar capacity, mm:		working feed	0—105
round (diameter)	40	rapid travel	95—118
square (side)	27	total travel	95—223
hexagon (distance between sides)	32		
Maximum stock feed, mm	190	<b>Tool Spindles</b>	
Maximum length of bar, mm	4000	Number of thread cutting spindles (Set in positions III and IV)	2
Main Tool Slide		<b>Speeds and Feeds</b>	
Travel of main slide, mm:		Number of work spindle speeds	24
working feed	10—80	Range of work spindle speeds, r.p.m.	156—2120
rapid travel:		<b>Drive</b>	
standard	80	220/380 volt, 3 phase, 50 cycle A.C. motors:	
by special order	120	Main drive:	
total travel:		power, kW	up to 20
standard	90—160	speed, r.p.m.	1500
by special order	130—200	Camshaft rotation drive during setting-up:	
		power, kW	1.7
		speed, r.p.m.	1000
		Conveyor drive:	
		power, kW	0.6
		speed, r.p.m.	1500
Cross Tool Slides		<b>Space Occupied</b>	
Number of cross slides	4	Floor space, mm	5685×1350
Minimum and maximum travel of cross slides, mm:		Height of machine, mm	1960
working feed	0—22		
total travel	31—60		
Fixture with Independent Feed		<b>Weight</b>	
Number of fixtures with independent feed (Set in positions III and IV)	2	Net weight, kg	approx. 8700

### FOUR SPINDLE BAR AUTOMATIC MACHINE

MODEL 1262M



The 1262M Four Spindle Bar Automatic Machine is designed for machining parts from metal bars which require a series of successive operations such as turning, drilling, reaming, threading, facing, cutting-off, etc.

The machine is particularly adapted for lot and mass production.

Bars of stock are loaded into each of four spindles and all tools in the successive positions are at work on different bars at the same time.

Cutting tools are clamped in toolholders or attachments mounted in four positions of main tool slide and on four cross slides.

Work spindles are mounted in the spindle carrier which indexes in the headstock frame.

Spindle speeds are selective through speed change gears.

Feeds of the main tool slide and cross slides as well as independent attachments feed are selective through feed change gears and cams.

The machine is completely automatic in its operation: rapid approach of the tool slides to the work spindles, slides feeding, rapid return to the starting positions, indexing of the spindle carrier, stock feeding and clamping are performed automatically. Indexing, stock feeding, and noncutting tool slide movements and all other idle movements are performed at high speed.

Machine automatic lubricating system is interlocked with the start of the main drive motor. On special order the machine may be set up for producing parts in accordance with the customer's drawings and technical conditions.



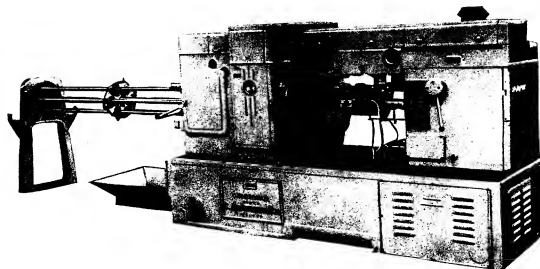
## SPECIFICATIONS

Capacity		Speeds and Range of Production	
Maximum bar capacity, mm:		Number of work spindle speeds (obtained through change gears)	33
round (diameter)	50*	Range of work spindle speeds, r.p.m.:	
hexagon (distance between sides)	43	standard	88—1015
square (side)	35	on special order	140—1620
Diameter of hole in spindle, mm	76		
Maximum bar length, mm	3600	Drive	
Maximum length of turning, mm	150	220/380 volt, 3 phase, 50 cycle, A.C. motors:	
Maximum stock feed, mm	160	Main drive:	
Maximum length of stock left, mm	80	power, kW	14
Diameter of thread cut, mm:		speed, r.p.m.	1000
minimum	4	Coolant pump:	
maximum	40	power, kW	0.65
		speed, r.p.m.	3000
Slides		Space Occupied	
Maximum travel of main tool slide, mm	152	Floor space, mm	5665×1200
Maximum travel of cross slides, mm:		Height of machine, mm	1855
first position	60		
second position	60	Weight	
third position	88	Net weight, kg	approx. 6800
fourth position	60		

\* On special order machine may be supplied for maximum bar diameter of 58 mm

## SIX SPINDLE BAR AUTOMATIC MACHINE

MODEL 1240-6



The 1240-6 Bar Automatic Machine is designed for machining parts from metal bars which require a series of successive operations such as turning, drilling, reaming, threading, facing, cutting-off, etc. The work is machined simultaneously in the six spindles of the rotary spindle block.

The cutting tools are clamped in toolholders, and in the fixtures mounted in six positions of the main tool slide and on the six cross slides. The attachment for high speed drilling can be arranged in any of the positions.

The speeds of work and tool spindles are selected through change gears.

The feeds of the main tool slide and cross tool slides, as well as the fixtures with independent feeds are also selected through change gears.

The length of main slide travel and the travel of the fixtures with independent feeds can be varied by regulating the quadrant linkage mechanism without changing cams.

Cross slides travel can be varied by regulating the quadrant linkage mechanism and by using four changeable cams.

The machine operates on an automatic cycle, comprising: rapid approach of tool slides to work spindles, feeds of tool slides, rapid return of tool slides, indexing of spindle block, swinging of stock-stop to working position, feed of stock to stock-stop and gripping of stock.

One revolution of the camshaft corresponds to the machining of one work piece.



The machine has a special electric drive for reducing the speed of the camshaft during setting-up operations.

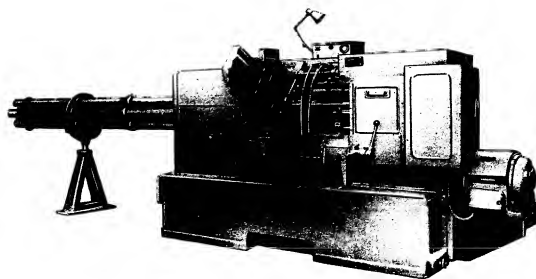
Chips are removed from the bed of the machine by means of a screw chip conveyor.

#### SPECIFICATIONS

<b>Capacity</b>		<b>Maximum and minimum travel of fixtures with independent feed, mm:</b>	
Maximum bar capacity, mm:		working feed	0—105
round (diameter)	40	rapid travel	95—118
square (side)	27	total travel	95—223
hexagon (distance between sides)	32		
Maximum stock feed, mm	190	<b>Tool Spindles</b>	
Maximum length of bar, mm	4000	Number of thread cutting spindles (Set in positions V and VI)	2
<b>Main Tool Slide</b>		<b>Speeds and Feeds</b>	
Travel of main slide, mm:		Number of work spindle speeds	24
working feed	10—80	Range of work spindle speeds, r.p.m.	156—2120
rapid travel:		<b>Drive</b>	
standard	80	220/380 volt, 3 phase, 50 cycle A.C. motors:	
by special order	120	Main drive:	
total travel:		power, kW	up to 20
standard	90—160	speed, r.p.m.	1500
by special order	130—200	Camshaft rotation drive during setting-up:	
<b>Cross Tool Slides</b>		power, kW	1.7
Number of cross slides	6	speed, r.p.m.	1000
Minimum and maximum travel of cross slides, mm:		Conveyor drive:	
working feed	0—22	power, kW	0.6
total travel	31—60	speed, r.p.m.	1500
<b>Fixture with Independent Feed</b>		<b>Space Occupied</b>	
Number of fixtures with independent feed (Set in positions V and VI)	2	Floor space, mm	5685X1350
		Height of machine, mm	1960
		<b>Weight</b>	
		Net weight, kg	approx. 9000

## SIX SPINDLE BAR AUTOMATIC MACHINE

MODEL 1261M



The 1261M Six Spindle Bar Automatic Machine is designed for machining parts from metal bars which require a series of successive operations such as turning, drilling, reaming, threading, facing, cutting-off, etc. The machine is particularly adapted for lot and mass production.

Bars of stock are loaded into each of six spindles and all the tools in the successive positions are at work on different bars at the same time.

Cutting tools are clamped in toolholders or attachments mounted in six positions of main tool slide and on four cross slides. Work spindles are mounted in the spindle carrier which indexes in the headstock frame.

Spindle speeds are selective through speed change gears.

Feeds of the main tool slide and cross slides as well as independent attachments feed are selective through feed change gears and cams.

The machine is completely automatic in its operation: rapid approach of the tool slides to the work spindles, slides feeding, rapid return to the starting positions, indexing of the spindle carrier, stock feeding and clamping are performed automatically.

Indexing, stock feeding, and non-cutting tool slide movements and all other idle movements are performed at high speed. Machine automatic lubricating system is interlocked with main drive motor start. Regularly the machine is supplied with a set of accessories.

On special order the machine may be set up for producing parts in accordance with the customer's drawings and technical conditions.







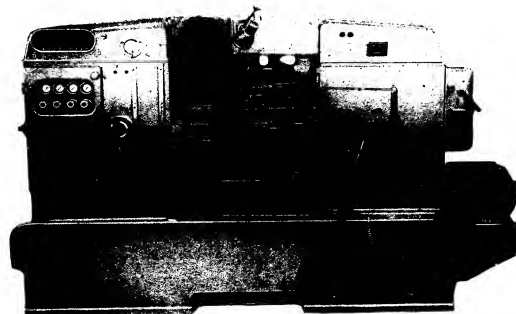
Regularly the machine is supplied with a set of cams, toolholders, change gears and threading and high speed drilling attachments. On special order the machine may be set up for producing of parts in accordance with the customer's drawings and technical conditions.

#### SPECIFICATIONS

<b>Capacity</b>		Range of work spindle speeds, r.p.m. .... 79.5—1600	
Maximum bar diameter, mm .....	65	<b>Drive</b>	
Diameter of hole in spindle, mm .....	90		
Maximum bar length, mm .....	3000		
Maximum stock feed, mm .....	200		
Diameter of thread cut, mm:		220/380 volt, 3 phase, 50 cycle A.C. motors:	
minimum .....	6	Main drive:	
maximum .....	36	power, kW .....	
<b>Slides</b>		speed, r.p.m. .... 1500	
Number of slides:		Machine setting-up drive:	
main tool slides .....	1	power, kW .....	
cross slides .....	6	speed, r.p.m. .... 1000	
Maximum travel of cross slides, mm:		Coolant pump:	
upper slides .....	90	power, kW .....	
lower slides .....	80	speed, r.p.m. .... 3000	
intermediate slides .....	70	<b>Space Occupied</b>	
<b>Speeds</b>		Floor space, mm .....	
Number of work spindle speeds (obtained through change gears) ....	27	Height of machine, mm .....	
		<b>Weight</b>	
		Net weight, kg .....	
		approx. 13000	

## FOUR SPINDLE AUTOMATIC CHUCKING MACHINE

MODEL 1262II



The 1262II Four Spindle Automatic Chucking Machine is designed for machining parts which require a series of successive operations (such as turning, boring, facing, drilling, reaming, threading, etc.) and made of castings and forgings. The machine is particularly adapted for lot and mass production.

Castings or forgings are loaded into each of four spindles and all tools in the successive positions are at work on different castings at the same time.

Cutting tools are clamped in toolholders, or attachments mounted in four positions of main tool slide and on four cross slides.

Spindle speeds are selective through speed change gears.

Feeds of the main tool slide and cross slides are selective through feed change gears and cams.

The machine is completely automatic in its working cycle. After finishing its part each spindle is stopped at loading position for loading of a new part. Loading and unloading is done by hand. Clamping of parts is effected hydraulically. Each chuck is operated independently. Start of the main drive motor is interlocked with the hydraulic and lubrication systems.



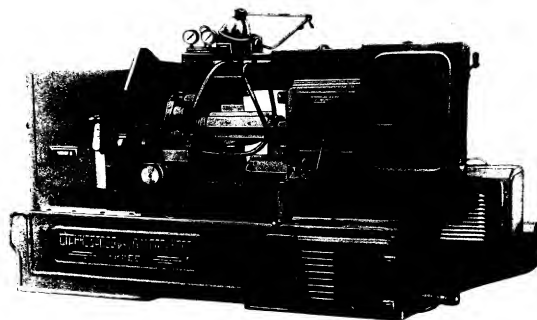
Regularly the machine is supplied for machining of parts of 50—100 mm in diameter, up to 120 mm in length and having external or internal thread with 1.5 mm pitch. Threading attachment and high speed drilling attachment are supplied with machine.

#### SPECIFICATIONS

Capacity		Range of work spindle speeds, r.p.m.	
Maximum diameter of work machined, mm	130		65—955
Maximum length of machining, mm	120	<b>Drive</b>	
Maximum diameter of work clamped in chuck, mm	130	220/380 volt, 3 phase, 50 cycle A.C. motors:	
		Main drive:	
		power, kW	14
		speed, r.p.m.	750
		Hydraulic pump:	
		power, kW	1.7
		speed, r.p.m.	1000
		Coolant pump:	
		power, kW	0.65
		speed, r.p.m.	3000
<b>Slides</b>		<b>Space Occupied</b>	
Maximum travel of main tool slide, mm	135	Floor space, mm	3070×1440
Number of cross slides	4	Height of machine, mm	1850
Maximum travel of cross slides, mm:		<b>Weight</b>	
lower slides	60	Net weight, kg	
upper slides	90	approx. 7850	
<b>Speeds and Feeds</b>			
Number of work spindle speeds (obtained through change gears)	36		

## SIX SPINDLE AUTOMATIC CHUCKING MACHINE

MODEL 1261II



The 1261II Automatic Chucking Machine is designed for machining parts from forgings and castings, requiring a series of successive operations such as turning, facing, boring, drilling, cutting threads, etc. The machine is particularly adapted for lot and mass production. The work is machined simultaneously in the six spindles of the rotary spindle block.

The cutting tools are clamped in the toolholders, mounted in six positions of the main tool slide and on the three cross slides.

Speeds of the work and tool spindles are selected through change gears. Feeds of the longitudinal and cross slides are selected through change gears and cams.

The machine operates on an automatic cycle, comprising: rapid approach of tool slides to the work spindles, feed of tool slides, rapid return of tool slides, indexing of spindle block and stop. The work pieces are loaded and unloaded in the machine by hand. Clamping the work is by hydraulic means.



The hydraulic system and automatic lubrication are interlocked with the starting of the main electric motor.

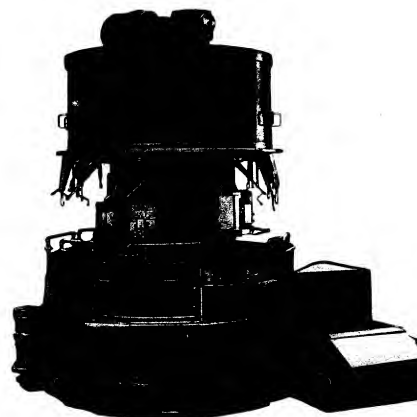
Thread cutting and high speed drilling attachments are supplied with the machine.

#### SPECIFICATIONS

Capacity		Range of work spindle speeds, r.p.m.	
Maximum diameter of work that can be machined, mm	130		65—955
Maximum length of work that can be machined, mm	120	Drive	
Maximum diameter of work that can be held in chuck, mm	100	220/380 volt, 3 phase, 50 cycle A.C. motors:	
<b>Tool Slides</b>		Main drive:	
Number of main slides	1	power, kW	14
Number of cross slides	3	speed, r.p.m.	750
Maximum travel of main slide, mm	135	Hydraulic pump:	
Maximum travel of cross slides, mm:		power, kW	1.7
first position	60	speed, r.p.m.	1000
third position	60	Coolant pump:	
fourth position	88	power, kW	0.65
<b>Speeds and Feeds</b>		speed, r.p.m.	3000
Number of work spindle speeds (obtained through change gears)	36	Space Occupied	
		Floor space, mm	3070×1440
		Height of machine, mm	1755
		Weight	
		Net weight, kg	approx. 6940

## VERTICAL SIX SPINDLE AUTOMATIC CHUCKING LATHE

MODEL 1A283



The 1A283 Automatic Lathe is designed for machining parts (in a chuck or in a special fixture) requiring a series of successive operations such as cylindrical and taper turning, facing, boring, drilling, counterboring and reaming, etc. performed in sequence and simultaneously with the loading and unloading of work. The machine is particularly adapted for lot and mass production.

Machining is performed on five work stations of the spindles; the sixth spindle station serves for loading and unloading of work machined.

Spindle speeds and feeds of tool heads are set-up for each position independently, by change gears.



Rapid approach of tool heads (cutting tools) to the work, feed and rapid return of tool heads, indexing of table, engaging and disengaging of friction clutch for cycle repeating, are performed automatically.

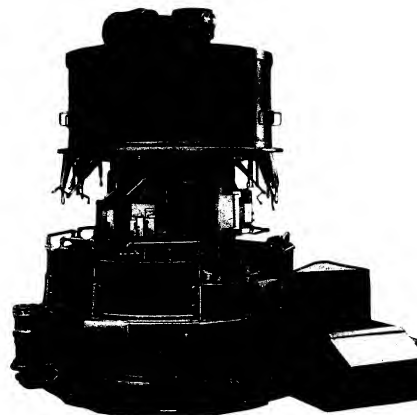
The machine is equipped with three electric motors.

#### SPECIFICATIONS

Capacity		Speeds and Feeds	
Distance from the face of spindle to the face of the tool slide, mm:		Number of spindle speeds	23
minimum	220	Range of spindle speeds, r.p.m.	26—233
maximum	570	Note: By means of a special device spindle speeds can be lowered.	
Nominal diameter of work that can be machined, mm	300	Range of horizontal and vertical feeds of tool heads, mm per revolution of spindle	0.133—5.78
Maximum length of turning, mm	200	Time of table indexing from one station to the next, sec.	3.4
Maximum radius of facing, mm	100		
Tool Heads		Drill Head	
Number of tool heads	5	Range of spindle speeds, r.p.m.	13—1075
Maximum summary (vertical and horizontal) travel of tool head, mm	200	Drive	
Plain Vertical Tool Head		220/380 volt, 3 phase, 50 cycle A.C. motors:	
Maximum vertical travel, mm	200	Main drive:	
Compound Tool Head		power, kW	20
Vertical travel, mm:		speed, r.p.m.	1500
minimum	100	Lubricating pump:	
maximum	200	power, kW	1
Maximum horizontal travel of tool slide, mm	100	speed, r.p.m.	1500
Universal Tool Head		Coolant pump:	
Maximum swivel	360°	power, kW	1
Vertical travel, mm:		speed, r.p.m.	1500
minimum	100	Space Occupied	
maximum	200	Floor space, mm	2895×2720
Maximum horizontal travel of tool slide, mm	100	Height of machine, mm	3695
		Weight	
		Net weight, kg	approx. 13250

## VERTICAL SIX SPINDLE AUTOMATIC CHUCKING LATHE

MODEL 1284



The 1284 Automatic Lathe is designed for machining parts (in a chuck or in a special fixture) requiring a series of successive operations such as cylindrical and taper turning, boring, facing, drilling, counterboring and reaming, etc. performed in sequence and simultaneously with the loading and unloading of work. The machine is particularly adapted for lot and mass production.

Machining is performed on five work stations of the spindles; the sixth spindle station serves for loading and unloading of work machined.

Spindle speeds and feeds of tool heads are set-up for each position independently by change gears.

Rapid approach of tool heads (cutting tools) to the work, feed and rapid



return of tool heads, indexing of table engaging and disengaging of friction clutch for cycle repeating are performed automatically.

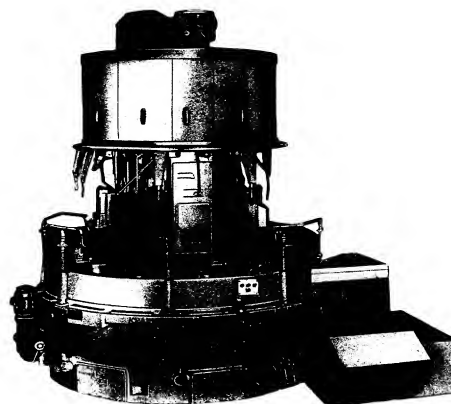
The machine is equipped with three electric motors.

#### SPECIFICATIONS

Capacity		Speeds and Feeds	
Distance from the face of spindle to the face of the tool slide, mm:		Number of spindle speeds	23
minimum	200	Range of spindle speeds, r.p.m.	21—184
maximum	550	Note: By means of a special device spindle speeds can be lowered.	
Nominal diameter of work that can be machined, mm	400	Range of horizontal and vertical feeds of tool heads, mm per revolution of spindle	0.168—7.3
Maximum length of turning, mm	200	Time of table indexing from one station to the next, sec.	3.4
Maximum radius of facing, mm	100		
Tool Heads		Drill Head	
Number of tool heads	5	Range of spindle speeds, r.p.m.	14—1110
Maximum summary (vertical and horizontal) travel of tool head, mm	200		
Plain Vertical Tool Head		Drive	
Maximum vertical travel, mm	200	220/380 volt, 3 phase, 50 cycle A.C. motors:	
		Main drive:	
		power, kW	20
		speed, r.p.m.	1500
		Lubricating pump:	
		power, kW	1
		speed, r.p.m.	1500
		Coolant pump:	
		power, kW	1
		speed, r.p.m.	1500
Compound Tool Head		Space Occupied	
Vertical travel, mm:		Floor space, mm	3150×2985
minimum	100	Height of machine, mm	3695
maximum	200		
Maximum horizontal travel of tool slide, mm	100		
Universal Tool Head		Weight	
Maximum swivel	360°	Net weight, kg	approx. 14470
Vertical travel, mm:			
minimum	100		
maximum	200		
Maximum horizontal travel of tool slide, mm	100		

## VERTICAL EIGHT SPINDLE AUTOMATIC CHUCKING LATHE

MODEL 1282



The 1282 Automatic Lathe is designed for machining parts which require a series of successive operations such as boring, turning, facing, grooving, drilling, etc. performed in sequence and simultaneously with the loading and unloading of work. The machine is particularly adopted for lot and mass production.

The parts to be machined are held either in chuck or in other work-holding fixture. Eight spindles are mounted on the rotatable table. All operations are performed on seven work stations; the eight station is for loading and unloading of work machined. Tool carrying heads are mounted on the upper portion of the column.

By means of change gears variable and independent spindle speeds may be obtained at each work station as well as independent and variable feeds for each tool head.



Rapid approach of tool heads to cutting position, feed, rapid return to starting positions, indexing of the table and its spindles from one station to the next, engaging and disengaging of friction clutch for cycle repeating are performed automatically.

The machine is equipped with three motors.

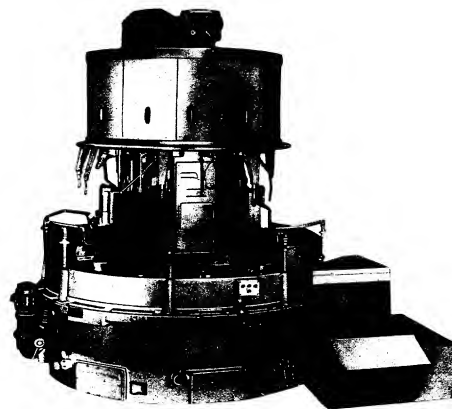
#### SPECIFICATIONS

Capacity		Speeds and Feeds	
Distance from the face of the spindle to the face of the tool slide, mm:		Number of spindle speeds	23
minimum	220	Range of spindle speeds, r.p.m.	55.5—500*
maximum	370	Range of vertical and horizontal feeds of tool head, mm per revolution of spindle	0.097—4.2
Normal diameter of work that can be machined, mm	200	Time of table indexing from one station to the next, sec.	3.5
Maximum length of turning, mm	200		
Maximum radius of face turning, mm	100		
Tool Heads		Drill Head	
Number of tool heads	7	Range of drill head spindle speeds, r.p.m.	20—1650
Maximum summary (vertical and horizontal) travel of tool head, mm	200		
Plain Vertical Tool Head		Drive	
Maximum vertical travel, mm	200	220/380 volt, 3 phase, 50 cycle A.C. motors:	
		Main drive:	
		power, kW	20—28
		speed, r.p.m.	1500
		Lubricating pump:	
		power, kW	1.0
		speed, r.p.m.	1500
		Coolant pump:	
		power, kW	1
		speed, r.p.m.	1500
Compound Tool Head		Space Occupied	
Vertical travel, mm:		Floor space, mm	2888×3095
minimum	100	Height of machine, mm	3695
maximum	200		
Maximum horizontal travel of tool slide, mm	100		
Universal Tool Head		Weight	
Maximum angle of swivel	360°	Net weight, kg	approx. 18000
Vertical travel, mm:			
minimum	100		
maximum	200		
Maximum horizontal travel of tool slide, mm	100		

\* Spindle speeds can be lowered by means of a special device.

## VERTICAL EIGHT SPINDLE AUTOMATIC CHUCKING LATHE

MODEL 1284B



The 1284B Automatic Lathe is designed for machining (in a chuck or in a special fixture) parts requiring a series of successive operations such as cylindrical and taper turning, facing, boring, drilling, counterboring and reaming, etc. performed in sequence and simultaneously with the loading and unloading of work. The machine is particularly adapted for lot and mass production.

Machining is performed on seven work stations of the spindles; the eighth spindle station serves for loading and unloading of work machined.

Spindle speeds and feeds of tool heads are set-up for each position independently, by change gears.



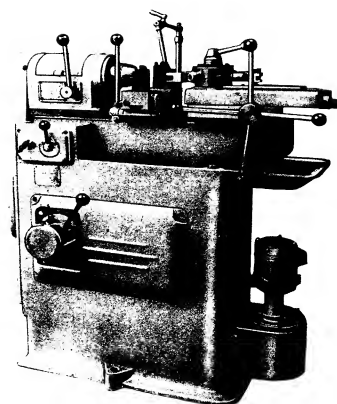
Rapid approach of the tool heads (cutting tools) to the work, feed and rapid return of tool heads, indexing of table, engaging and disengaging of friction clutch for cycle repeating, are performed automatically.

The machine is equipped with three electric motors.

#### SPECIFICATIONS

Capacity		Speeds and Feeds	
Distance from the face of spindle to the face of the tool slide, mm:		Number of spindle speeds	23
minimum	196	Range of spindle speeds, r.p.m.	32—287
maximum	546	Note: By means of a special device spindle speeds can be lowered.	
Nominal diameter of work that can be machined, mm	400	Range of horizontal and vertical feeds of tool heads, mm per revolution of spindle	0.085—3.69
Maximum length of turning, mm	200	Time of table indexing from one station to the next, sec.	3.5
Maximum radius of facing, mm	100	<b>Drill Head</b>	
<b>Tool Heads</b>		Range of spindle speeds, r.p.m.	20—1635
Number of tool heads	7	<b>Drive</b>	
Maximum summary (vertical and horizontal) travel of tool head, mm	200	220/380 volt, 3 phase, 50 cycle A.C. motors:	
<b>Plain Vertical Tool Head</b>		Main drive:	
Maximum vertical travel, mm	200	power, kW	28—40
<b>Compound Head</b>		speed, r.p.m.	1500
Vertical travel, mm:		Lubricating pump:	
minimum	100	power, kW	1
maximum	200	speed, r.p.m.	1500
Maximum horizontal travel of tool slide, mm	100	Coolant pump:	
<b>Universal Tool Head</b>		power, kW	1
Maximum swivel	360°	speed, r.p.m.	1500
Vertical travel, mm:		<b>Space Occupied</b>	
minimum	100	Floor space, mm	3280×3530
maximum	200	Height of machine, mm	3670
Maximum horizontal travel of tool slide, mm	100	<b>Weight</b>	
		Net weight, kg	approx. 20000

#### TURRET LATHE MODEL 1318



The 1318 Ram Type Universal Turret Lathe is designed for the rapid production of small parts from bars.

Spindle has two ranges of speeds which are obtained through the pick-off pulleys mounted on the gear box shaft. The machine is driven by an electric motor coupled directly to a speed reduction gear box mounted inside of machine base.

The bar from which the parts to be machined is clamped in a collet chuck by means of the lever mounted on the front side of the headstock. When released the bar is automatically fed up to the adjustable stock stop mounted on the turret. Feeding is effected by weights.

The turret slide and cross slide are manually operated.



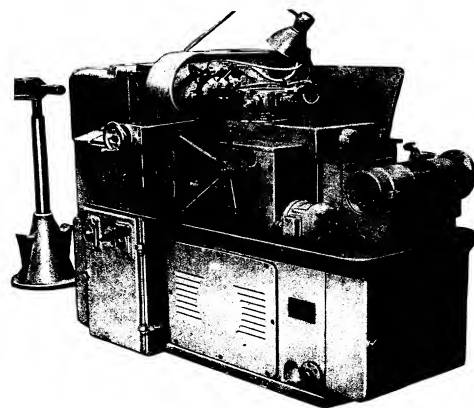


## SPECIFICATIONS

Capacity		Spindle Speeds	
Height of centers, mm	120	Number of spindle speeds	8
Distance, end of spindle to turret face, mm:		Spindle speeds (two ranges), r.p.m.	210—1420; 397—2684
minimum	110	Drive	
maximum	220		
Bar capacity, mm:		220/380 volt, 3 phase, 50 cycle A.C. motor:	
round (diameter)	18	power, kW	1.7
square (side)	12	speed, r.p.m.	1500
hexagon (distance between sides)	15	Space Occupied	
Turret		Floor space, mm	1020×500
Number of tool holes	6	Height of machine, mm	1350
Tool hole diameter, mm	18	Weight	
Maximum longitudinal travel, mm	80		
		Net weight, kg	approx. 460

## AUTOMATIC TURRET LATHE

MODEL 11I318



The 11I318 Automatic Turret Lathe is designed for high production of parts from bars of various cross sections and materials, requiring a series of successive operations, such as turning, drilling, boring, reaming, threading, etc.

The cutting tools are fastened in the holders and fixtures mounted on the six turret faces, and in the tool holders of the cross slide.

The spindle speeds and turret and cross slide feeds are pre-selected and change automatically, simultaneously with the indexing of the turret by means of electro-magnetic clutches.

A separate motor controls feeding and clamping of the bar, this being effected by pressing a push-button, without stopping the machine. The turret slide has an automatic back rapid traverse accomplished by a separate electric motor.



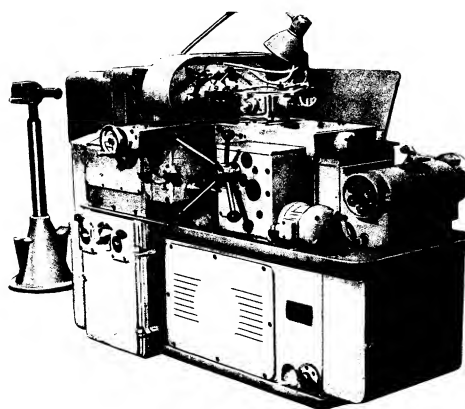
Automatic lubrication of the principal machine units is provided by an oil pump driven by an individual motor. The same motor drives the coolant pump.

#### SPECIFICATIONS

Capacity		Speeds and Feeds	
Height of centers, mm	125	Number of spindle speeds	4
Distance, end of spindle to turret face, mm:		Range of spindle speeds, r.p.m.	200—4000
minimum	100	Number of turret and cross slide feeds	3
maximum	310	Range of turret feeds, mm per revolution of spindle	0.05—0.2
Diameter of hole in spindle, mm	34	Range of cross slide feeds, mm per revolution of spindle	0.025—0.1
Bar capacity, mm:			
round (diameter)	18		
square (side)	12		
hexagon (distance between sides)	16		
Maximum bar feed, mm	100	Drive	
Maximum diameter held in chuck, mm	130	Power of 220/380 volt, 3 phase, 50 cycle A.C. motor, kW	2.8
Turret		Space Occupied	
Maximum travel of turret (by power and manually), mm	210	Floor space, mm	4060×945
Cross Slide		Height of machine, mm	1270
Maximum cross travel of slide (by power and manually), mm	100	Weight	
		Net weight, kg	approx. 1300

## AUTOMATIC TURRET LATHE

MODEL 1II326



The 1II326 Automatic Turret Lathe is designed for high production of parts from bars of various cross sections and materials, requiring a series of successive operations such as turning, drilling, boring, reaming, threading, etc.

The cutting tools are fastened in the holders and fixtures mounted on the six turret faces and in the toolholders of the cross slide.

The spindle speeds and turret and cross slide feeds are pre-selected and change automatically, simultaneously with the indexing of the turret by means of electro-magnetic clutches.

A separate motor controls feeding and clamping of the bar, this being effected by pressing a push-button, without stopping the machine.

The turret slide has an automatic back rapid traverse accomplished by a separate electric motor.



Automatic lubrication of the principal machine units is provided by an oil pump driven by an individual motor.  
The same motor drives the coolant pump.

#### SPECIFICATIONS

Capacity		Cross slide	
Height of centers, mm	150	Maximum cross travel of slide (by power and manually), mm	120
Distance, end of spindle to turret face, mm:		Speeds and Feeds	
minimum	127	Number of spindle speeds	6
maximum	427	Range of spindle speeds, r.p.m.	200—3350
Diameter of hole in spindle, mm	41	Number of turret and cross slide feeds	3
Bar capacity, mm:		Range of turret feeds, mm per revolution of spindle	0.05—0.2
round (diameter)	25	Range of cross slide feeds, mm per revolution of spindle	0.025—0.1
square (side)	17	Drive	
hexagon (distance between sides)	22	Power of 220/380 volt, 3 phase, 50 cycle A.C. motor, kW	4.5
Maximum bar feed, mm	150	Space Occupied	
Maximum diameter held in chuck, mm	150	Floor space, mm	4050×940
Turret		Height of machine, mm	1300
Maximum travel of turret (by power and manually), mm	300	Weight	
		Net weight, kg	approx. 1450

#### TURRET LATHE MODEL 1336M



The 1336M Turret Lathe is designed for accurate and efficient machining parts which require a series of successive operations such as turning, drilling, boring, reaming, etc. in lot and mass production. The outstanding feature of this lathe design is its large turret, which is made to revolve around a horizontal axis instead of the usual vertical mounting, thus eliminating the customary cross slide.

The parts to be machined are held either in a collet chuck or in special chuck.

The large diameter turret provides for 16 tool positions near its circumference.

The headstock is equipped to provide 12 spindle speeds in geometric progression. The speeds are obtained through a speed gear box and change gears.

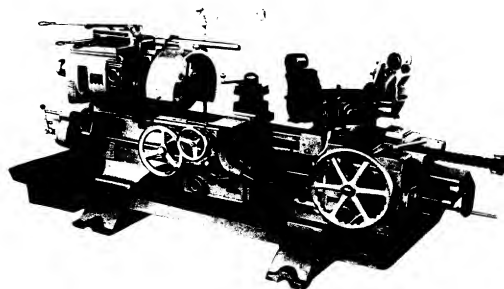
There are six longitudinal power feeds for the turret slides used for turning, drilling, reaming, etc. and six cross (circular movement of turret) feeds for the turret used for facing, cutting-off, etc. operations. The feeds are both equipped with independent overload safety devices.

The hand feed is effected by turning a handwheel.



## SPECIFICATIONS

Capacity		Speeds and Feeds	
Height of centers, mm	185	Number of spindle speeds	12
Minimum and maximum distance from face of turret to end of spindle, mm	60—660	Range of spindle speeds, r.p.m.	48—1160
Diameter of hole in spindle, mm	39	Number of longitudinal feeds of turret	6
Bar capacity, mm:		Range of feeds of turret, mm per revolution of spindle:	
round (diameter)	36	longitudinal	0.06—0.56
square (side)	27	cross	0.04—0.39
hexagon (distance between sides)	32	<b>Drive</b>	
Maximum diameter of work held in chuck, mm:		220/380 volt, 3 phase, 50 cycle A.C. motors:	
over turret slide	380	Main drive:	
over bed ways	420	power, kW	2.8
		speed, r.p.m.	1500
		Coolant pump:	
		power, kW	0.125
		speed, r.p.m.	3000
Turret		Space Occupied	
Number of tool holes	16	Floor space, mm	2280×1000
Maximum longitudinal travel of turret (manually and by power), mm	600	Height of machine, mm	1280
Number of adjustable stops	8	Weight	
		Net weight, kg	approx. 1500

TURRET LATHE  
MODEL 1K36

The 1K36 Saddle Type Turret Lathe is designed for machining parts which require a series of successive operations such as turning, drilling, boring, reaming, threading, recessing, etc.

The parts to be machined are held either in a three-jaw chuck (hand or air operated) or in other work-holding fixtures.

The spindle has twelve speeds, both forward and reverse. The spindle speeds are obtained through a speed gear box.

The turret saddle has reversible power feed, hand travel and power rapid traverse (forward and back) with automatic disengagement at the end of the back stroke. A safety interlock prevents the feed and rapid traverse mechanisms from engaging at the same time.

A six position stop roll is automatically indexed with the hexagon turret and provides an automatic feed trip and dead stop for each face of the turret. The individual stop screws are easily adjustable. The indexing of the hexagon turret is effected manually. The feed mechanism is provided with automatic overload release.

The carriage and the cross slide are provided with reversible power feed and hand travel. Six longitudinal and two cross feed stops automatically trip the carriage and cross slide feeds respectively.



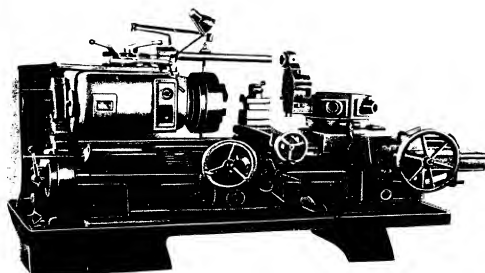
The feeds of the turret saddle, carriage and cross slide are obtained through a feed box. The cross slide has a quick indexing 4-way tool holder. Taper turning and recessing can be done with the help of fixtures.

#### SPECIFICATIONS

Capacity		Speeds and Feeds	
Height of centers, mm	210	Number of spindle speeds	12
Distance, end of spindle to turret face, mm:		Range of spindle speeds, r.p.m.:	
minimum	260	forward	44—1000
maximum	1177	reverse	43—985
Maximum swing, mm:		Number of turret, carriage and cross slide feeds	16
over bed ways	440	Range of turret and carriage longitudinal feeds, mm per revolution of spindle	0.07—2.29
over carriage	420	Range of cross slide feeds, mm per revolution of spindle	0.03—1.00
over cross slide	350		
Hexagon Turret		Drive	
Total longitudinal travel (by power and manually), mm	917	220/380 volt, 3 phase, 50 cycle A.C. motor:	
		power, kW	10
		speed, r.p.m.	1500
Carriage and Cross Slide		Space Occupied	
Total longitudinal travel of carriage (by power and manually), mm	1012	Floor space, mm	3200×1780
Total cross travel of slide, mm	272	Height of machine, mm	1430
		Weight	
		Net weight, kg	approx. 2870

## TURRET LATHE

### MODEL 1K37



The 1K37 Saddle Type Universal Turret Lathe is designed for machining parts which require a series of successive operations: turning, drilling, boring, reaming, threading, recessing, etc.

The parts to be machined are held either in a three-jaw chuck (hand or air operated) or in other work-holding fixture.

The turret is hexagon-shaped, allowing six tool position and the cross slide has a quick indexing four-way tool holder.

Change of spindle speeds are obtained through a headstock. Spindle has forward and reverse rotation.

Feeds of turret slide and cross slide are obtained through the use of feed boxes mounted in aprons.

The turret saddle has reversible power feed and power rapid traverse (forward and reverse) with automatic disengagement at the end of the back stroke.

A safety interlocking device prevents the feed and rapid traverse mechanisms from engagement at the same time.

Six stops synchronized with the six turret stations operate automatically with indexing of the turret and provide an automatic feed trip and dead stop for each face of the turret. The feed mechanism is equipped with an overload safety device.

Indexing of the turret is effected by hand.



The carriage and the cross slide are provided with reversible power feed.

Six longitudinal and two cross stops automatically trip the carriage and cross slide feeds respectively. Taper turning and recessing can be done with the help of fixtures.

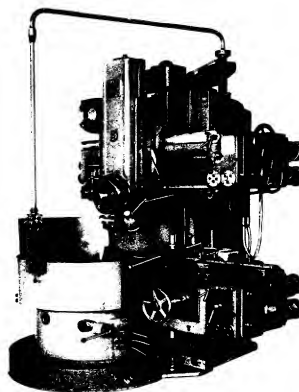
The machine is motor driven.

#### SPECIFICATIONS

Capacity		Speeds and Feeds	
Height of centers, mm	250	Number of spindle speeds	12
Distance between spindle flange and turret face, mm:		Range of spindle speeds, r.p.m.:	
minimum	250	forward rotation	29—800
maximum	1290	reverse rotation	32—872
Swing over bed ways, mm	550	Range of turret longitudinal feed, mm	
Swing over carriage, mm	520	per revolution of spindle	0.07—2.29
Swing over cross slide, mm	450	Range of cross slide feeds, mm per	
		revolution of spindle:	
		longitudinal	0.07—2.29
		cross	0.03—1.00
Turret		Drive	
Number of tool holes	6	220/380 volt, 3 phase, 50 cycle A.C. motor:	
Tool hole diameter, mm	95	power, kW	14
Maximum longitudinal travel (hand and power), mm	1040	speed, r.p.m.	1500
Cross Slide		Space Occupied	
Maximum travel (hand and power), mm:		Floor space, mm	3390×1875
longitudinal	1200	Height of machine, mm	1450
cross	307	Weight	
		Net weight, kg	approx. 3650

## SINGLE COLUMN VERTICAL BORING AND TURNING MILL

MODEL 1531



The 1531 Vertical Boring and Turning Mill is designed for machining parts which require a series of successive operations, such as turning, boring, facing, drilling, reaming, etc.

The parts to be machined are held in a four-jaw chuck or in work-holding fixtures mounted on the table.

The machine is provided with one vertical head and one side head in which the cutting tools are fastened.

The vertical head can be traversed horizontally along the rail ways, the rail being raised or lowered on the machine column ways.

The vertical head has a pentagon shaped indexing turret mounted on a ram and can be swivelled to an angle of 45°.

The side head is fitted with a square block indexing turret and has a vertical traverse on the column.

The machine is provided with eight motors. The table speeds and the



vertical and horizontal feeds of the heads are obtained through a speed gear box and feed boxes.

Starting and stopping table rotation is effected by means of a friction clutch and a braking device.

The feed mechanisms are equipped with overload safety and interlocking devices.

The horizontal and vertical travel of the heads are effected both by power and manually.

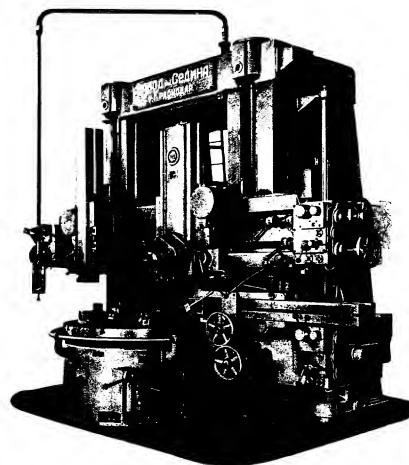
Control of the machine is accomplished by a pendant push-button station with duplicate control of rapid traverse and feeds, arranged on the feed gear boxes.

#### SPECIFICATIONS

Capacity		Speeds and Feeds	
Diameter of table, mm	1120	Number of table speeds	18
Distance, table top to rail head, mm:		Range of table speeds, r.p.m.	6.3—315
minimum	0	Number of feeds of vertical and side heads	8
maximum	1250	Range of vertical and side head feeds, mm/min.	3.15—180
Distance, table top to rail, mm:		Rapid power traverse of heads, m/min.	2.3
minimum	400	Rapid power traverse of rail, m/min.	0.5
maximum	1250		
Maximum diameter which can be turned, mm:			
by vertical head	1250		
by side head	1120		
Height of work admitted, mm	1000		
Weight of work admitted, kg	2500		
Maximum length turned by side head, mm	700		
Diameter of work held in table jaw chuck, mm:			
minimum	100		
maximum	1050		
Vertical Head		Drive	
Maximum travel of vertical head (by power and manually), mm:		220/380 volt, 3 phase, 50 cycle A.C. motors:	
horizontal	840	Main drive:	
vertical	700	power, kW	28
Maximum swivel of vertical head	45°	speed, r.p.m.	1500
		Rapid traverse (4 motors):	
		power, kW	1.0
		speed, r.p.m.	1500
		Rail elevating:	
		power, kW	1.7
		speed, r.p.m.	1000
		Feed drive (2 motors):	
		power, kW	1.0
		speed, r.p.m.	1500
Side Head		Space Occupied	
Maximum travel of side head (by power and manually), mm:		Floor space, mm	3000×2440
horizontal	520	Height of machine, mm	3380
vertical	960		
		Weight	
		Net weight, kg	approx. 12000

## DOUBLE COLUMN VERTICAL BORING AND TURNING MILL

MODEL 1551



The 1551 Vertical Boring and Turning Mill is designed for machining parts which require a series of successive operations, such as turning, boring, facing, drilling, reaming, etc.

The parts to be machined are held in a four-jaw chuck or in work-holding fixtures mounted on the table.

The machine is provided with two vertical heads and one side head in which the cutting tools are fastened.

The vertical heads can be traversed horizontally along the rail ways, the rail being raised or lowered on the ways of the machine columns. The left-hand rail head is fitted with a square block toolholder and can be swivelled to an angle of 40°.



The right-hand rail head has a pentagon shaped indexing turret mounted on a vertical ram.

The side head is fitted with a square block indexing turret, allowing four tool positions. The side head has a vertical traverse on the right-hand column of the machine.

The table speeds and the vertical and horizontal feeds of the heads are obtained through a speed gear box and feed boxes.

A single lever selects the feeds required.

The horizontal and vertical travel of the heads are effected both by power and manually. Rapid traverse of rail and heads for positioning purposes are also provided.

Clamping and unclamping the rail is accomplished automatically by a separate motor.

The feed mechanisms are equipped with overload safety and interlocking devices.

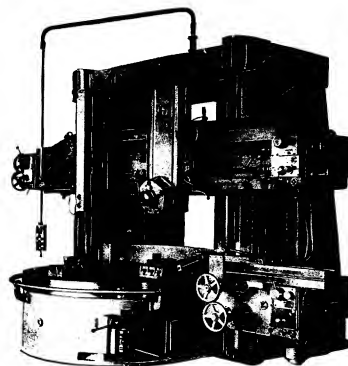
The machine is supplied with nine motors.

#### SPECIFICATIONS

Capacity		Side Head	
Diameter of table, mm	1400	Maximum travel of side head (by power and manually), mm:	
Distance, table top to rail heads, mm:		horizontal	600
minimum	0	vertical	1250
maximum	1510	<b>Speeds and Feeds</b>	
Distance, table top to rail, mm:		Number of table speeds	18
minimum	250	Range of table speeds, r.p.m.	2-70
maximum	1300	Number of feeds (rail and side heads)	12
Diameter of work admitted, mm	1650	Range of horizontal and vertical feeds,	
Height of work admitted, mm	1250	mm per revolution of table	0.2-9
Maximum diameter which can be turned, mm:		Speed of rapid traverse of heads,	
by rail heads	1650	m/min.	3
by side head	1500	Speed of rapid traverse of rail, m/min.	0.1
Weight of work admitted, kg	5000	<b>Drive</b>	
Maximum taper turned	40°	220/380 volt, 3 phase, 50 cycle A.C. motors:	
Diameter of work held in table jaw chuck, mm:		Main drive:	
minimum	100	power, kW	28
maximum	1400	speed, r.p.m.	1000
<b>Rail Heads</b>		Feed and rapid traverse of heads (6 motors):	
Maximum travel of rail heads (by power and manually), mm:		power, kW	1.7
left-hand head:		speed, r.p.m.	1500
horizontal	890	Rapid traverse of rail:	
vertical	950	power, kW	7
right-hand head:		speed, r.p.m.	750
horizontal	990	Rail clamping:	
vertical	865	power, kW	1.7
Maximum swivel of left-hand rail head	40°	speed, r.p.m.	1500
		<b>Space Occupied</b>	
		Floor space, mm	4495x4800
		Height of machine, mm	4080
		<b>Weight</b>	
		Net weight, kg	approx. 28000

## DOUBLE COLUMN VERTICAL BORING AND TURNING MILL

MODEL 1553



The 1553 Vertical Boring and Turning Mill is a heavy duty machine designed for turning and boring cylindrical and tapered surfaces as well as for facing large size work pieces.

The parts to be machined are held in a four-jaw chuck or in work-holding fixtures mounted on the table.

The machine is provided with two vertical heads and one side head in which the cutting tools are fastened.

The vertical heads can be traversed horizontally along the rail ways, the rail being raised or lowered on the ways of the machine columns. The left-hand rail head is fitted with a square block toolholder. The right-hand rail head has a pentagon shaped indexing turret mounted on a vertical ram.

The side head is fitted with a square block indexing turret, allowing four tool positions. The side head has a vertical traverse on the right-hand column of the machine.

All the heads are provided with automatic feeds and rapid power traverse in all directions. Rapid power traverse of rail is also provided.





Clamping and unclamping the rail is accomplished automatically by a separate motor.

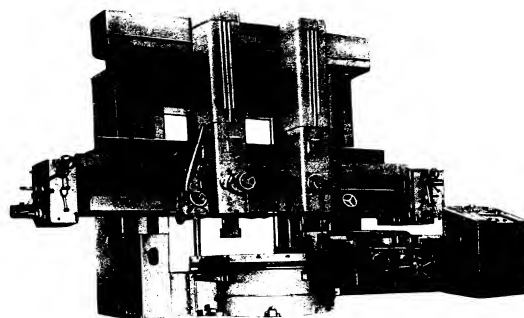
The feed mechanisms are equipped with overload safety and interlocking devices.

#### SPECIFICATIONS

Capacity		Speeds and Feeds	
Diameter of table, mm	2100	Number of table speeds	18
Distance, table top to rail heads, mm:		Range of table speeds, r.p.m.	1.4-48
minimum	0	Number of feeds (rail and side heads)	12
maximum	1800	Range of vertical and horizontal feeds, mm per revolution of table	0.2-9
Distance, table top to rail, mm:		Rapid traverse speed, mm/min.:	
minimum	250	heads—vertical and horizontal	3
maximum	1650	rail—vertical	0.4
Maximum diameter which can be turned, mm:		Drive	
by rail heads	2300	220/380 volt, 3 phase, 50 cycle	
by side head	2100	A. C. motors:	
Height of work admitted, mm	1600	Main drive:	
Weight of work admitted, kg	7000	power, kW	40
Diameter of work held in table jaw chuck, mm:		speed, r.p.m.	1000
minimum	100	Feed and rapid traverse of heads (6 motors):	
maximum	2100	power, kW	1.7
Rail Heads		speed, r.p.m.	1500
Maximum travel of rail heads, mm:		Rapid traverse of rail:	
left-hand head:		power, kW	7
horizontal	1215	speed, r.p.m.	750
vertical	950	Rail clamping:	
right-hand head:		power, kW	1.7
horizontal	1315	speed, r.p.m.	1500
vertical	865	Space Occupied	
Maximum swivel of left-hand rail head	40°	Floor space, mm	4345 X 5460
Side Head		Height of machine, mm	4480
Maximum travel of side head (by power or manually), mm:		Weight	
horizontal	600	Net weight, kg	
vertical	1520		
		approx. 34000	

## VERTICAL BORING AND TURNING MILL

MODEL 1556



The 1556 Vertical Boring and Turning Mill is a universal machine designed for turning, boring, facing, angle turning and cutting of English and Metric threads.

The machine is equipped with two vertical ram heads on a movable rail and one side head on a right-hand upright.

Table speeds and head feeds are selective through sliding gears of head-stock and feed boxes.

Changes of table speed are made from easily accessible control panel through hydraulic mechanism.

The table is equipped with device for reducing the load on the bed ways and electro-hydraulically controlled brake.

On special order the machine may be supplied with angle turning attachments, thread cutting attachments, changeable turret head.

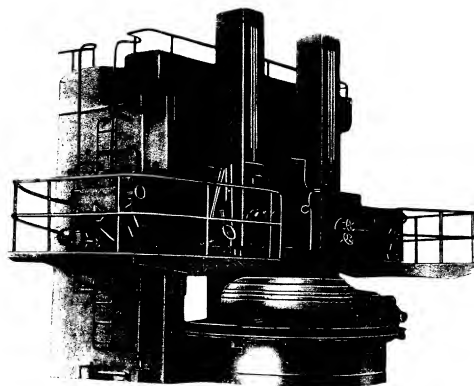


## SPECIFICATIONS

Capacity		Speeds and Feeds	
Diameter of table, mm	2250	Number of table speeds	18
Maximum diameter of work which can be turned, mm:		Range of table speeds, r.p.m.	0.95—47.5
with side head	2500	Rapid traverse of rail, mm/min.	425
without side head	2700	Rapid traverse of vertical heads, mm/min.	2200
Maximum height of work admitted (from table surface), mm	1600	Rapid traverse of side head, mm/min.	2200
Maximum weight of work admitted, kg	14000		
Cross Rail		Drive	
Maximum travel of rail (power), mm	1500	220/380 volt, 3 phase, 50 cycle A.C. motors:	
		Main drive:	
		power, kW	40
		speed, r.p.m.	1500
		Rapid traverse of heads:	
		power, kW	2.8
		speed, r.p.m.	3000
		Rail traverse:	
		power, kW	7.0
		speed, r.p.m.	1500
		Rail clamping:	
		power, kW	2.8
		speed, r.p.m.	1500
Vertical Ram Heads		Space Occupied	
Minimum distance between ram axis, mm	450	Floor space, mm	3600x6900
Maximum travel of ram, mm:		Height of machine, mm	5600
horizontal	1630		
vertical	550		
Side Head		Weight	
Maximum travel of side head, mm:		Net weight, kg	approx. 47200
horizontal	850		
vertical	1500		

## VERTICAL BORING AND TURNING MILL

MODEL 1532



The 1532 Vertical Boring and Turning Mill is a universal machine designed for turning, boring, facing, angle turning and cutting of English and Metric threads.

The machine is equipped with two vertical ram heads on a movable rail and one side head on a right-hand upright.

Table speeds and head feeds are selective through sliding gears of headstock and feed boxes.

Changes of table speed are made from easily accessible control panel through hydraulic mechanism.

The table is equipped with device for reducing the load on the bed ways and electro-hydraulically controlled brake.

On special order the thread cutting and angle turning attachments are available.

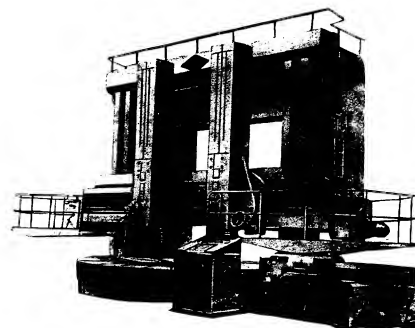


## SPECIFICATIONS

Capacity		Speeds and Feeds	
Diameter of table, mm	3080	Number of table speeds	18
Maximum diameter of work which can be turned, mm:		Range of table speeds, r.p.m.	0.6—31
with side head	3200	Rapid traverse of rail, mm/min	425
without side head	3400	Rapid traverse of vertical heads, mm/min	2200
Maximum height of work admitted (from table surface), mm	2000	Rapid traverse of side head, mm/min	2200
Maximum weight of work admitted, kg	20000		
Cross Rail		Drive	
Maximum travel of rail (power), mm	1450	220/380 volt, 3 phase, 50 cycle A.C. motors:	
		Main drive:	
		power, kW	55
		speed, r.p.m.	1500
		Rapid traverse of heads:	
		power, kW	2.8
		speed, r.p.m.	3000
		Rapid traverse of rail:	
		power, kW	10
		speed, r.p.m.	1500
		Rail clamping:	
		power, kW	2.8
		speed, r.p.m.	1500
Vertical Ram Heads		Space Occupied	
Minimum distance between ram axis, mm	670	Floor space, mm	4900×8950
Maximum travel of ram, mm:		Height of machine, mm	7000
horizontal	2000		
vertical	1500		
Side Head		Weight	
Maximum travel of side head, mm:		Net weight, kg	approx. 70000
horizontal	850		
vertical	1450		

## VERTICAL BORING AND TURNING MILL

### MODEL 1565



The 1565 Vertical Boring and Turning Mill is a universal machine designed for turning, boring, facing, angle turning and cutting of English and Metric threads. The machine is equipped with two vertical ram heads on a movable rail and one side head on a right-hand upright.

Table speeds and head feeds are selective through sliding gears of head-stock and feed boxes. Changes of table speed are made from easily accessible control panel through hydraulic mechanism.

The table is equipped with hydraulically controlled brake.

On special order the machine may be supplied with angle turning and thread cutting attachments.



## SPECIFICATIONS

## Capacity

Diameter of table, mm	4500
Maximum diameter of work which can be turned, mm:	
with side head	5000
without side head	5250
Maximum height of work admitted (from table surface), mm	3000
Maximum weight of work admitted, kg	45000

## Cross Rail

Maximum vertical travel of rail (power), mm	2650
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## Vertical Ram Heads

Minimum distance between ram axis, mm	650
Maximum travel of ram, mm:	
horizontal	3200
vertical	1800

## Side Head

Maximum travel, mm:	
horizontal	1400
vertical	2650

## Speeds and Feeds

Range of table speeds (infinitely variable), r.p.m.	0.4—20.7
Rapid traverse of rail, mm/min.	300
Rapid traverse of vertical heads and rams, mm/min.	2200
Rapid traverse of side head, mm/min.	2200
Rapid traverse of side head slide, mm/min.	2800

## Drive

220/380 volt, 3 phase, 50 cycle A.C. motors:	
Main drive:	
power, kW	70
speed, r.p.m.	from 500 to 1500
Rapid traverse of heads:	
power, kW	4.5
speed, r.p.m.	3000
Rapid traverse of rail:	
power, kW	14
speed, r.p.m.	1500
Clamping of rail:	
power, kW	2.8
speed, r.p.m.	1500

## Space Occupied

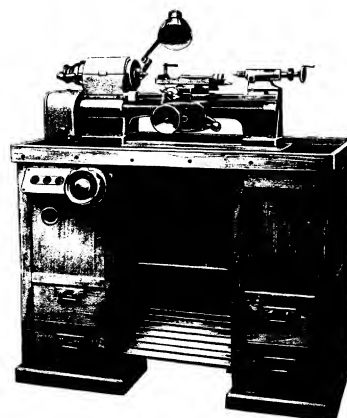
Floor space, mm	5750 x 1120
Height of machine, mm	8470

## Weight

Net weight, kg	approx. 140000
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## PRECISION TOOL ROOM LATHE

## MODEL 1602



The 1602 Tool Room Lathe is designed for miscellaneous accurate lathe work and particularly suitable for the application in the fine mechanic's industry.

The drive from the motor is transmitted to the spindle through a friction-type speed variator and a belt transmission.

The drive to the longitudinal feed is obtained through the belts to the feed gear box and the lead screw.

Feeds are selected through change gears in the feed box.

On the machine, provision is made to work to a positive stop for longitudinal power travel, as well as for hand cross travel.

The positive stop for cross slide travel is adjusted by means of a dial indicator device.

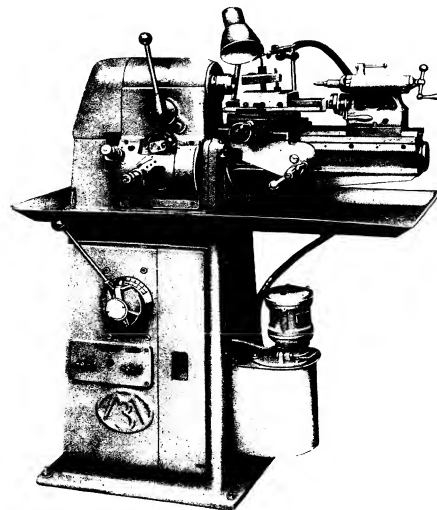


## SPECIFICATIONS

<b>Capacity</b>		Maximum travel of spindle, mm . . . . .	55
Maximum swing over bed ways, mm	130	Setover on side, mm . . . . .	±2
<b>Carriage</b>		<b>Speeds and Feeds</b>	
Maximum distance between centers, mm . . . . .	250	Range of spindle speeds, r.p.m. . . . .	125—2500
Maximum diameter that can be turned over carriage, mm . . . . .	84	Number of longitudinal feeds of carriage . . . . .	5
Bar capacity, mm: . . . . .		Range of feeds, mm per revolution of spindle . . . . .	0.030—0.205
round stock held in chuck . . . . .	13.5	<b>Drive</b>	
round stock held in collet . . . . .	8	220/380 volt, 3 phase, 50 cycle	
<b>Carriage</b>		A. C. motor (two-speed):	
Maximum travel of carriage, mm: . . . . .		power, kW . . . . .	0.65
longitudinal . . . . .	200	speed, r.p.m. . . . .	1500/3000
cross (cross slide) . . . . .	85	<b>Space Occupied</b>	
Swivel of upper part of tool slide . . . . .	90°	Floor space, mm . . . . .	1030×665
<b>Spindle</b>		Height of machine, mm . . . . .	1260
Diameter of hole in spindle, mm . . . . .	14	<b>Weight</b>	
Taper hole in spindle . . . . . Morse No. 2		Net weight, kg . . . . . approx.	290
<b>Tailstock</b>			
Taper hole in spindle . . . . . Morse No. 2			

## PRECISION TOOL ROOM LATHE

### MODEL 1613Д



The 1613Д Precision Lathe has been designed for machining work to the close tolerances required by modern industry. It is recommended for the production of many small accurate parts required in a manufacturing plant, for precision tool room work and for general machine shop use.

All general lathe- and screw-cutting operations can be performed in this machine.

Simplicity of design, high accuracy and ease of operation are its outstanding features.

The work to be machined is held either in a collet or in a chuck. The machine can be used for center type operations as well.



The spindle drive is effected by a motor mounted underneath the machine on a swinging plate. Power is transmitted from the motor two-step pulley to the speed box pulley by Vee belts. Vee belts also connect the speed box pulley with the headstock spindle. A single lever pre-selecting control allows the operator to select the next speed while the machine is in operation and then to engage it by shifting the lever. A single lever also controls the gripping and releasing action of the collet simultaneously with the starting and stopping of the machine. Both these mechanisms are interlocked.

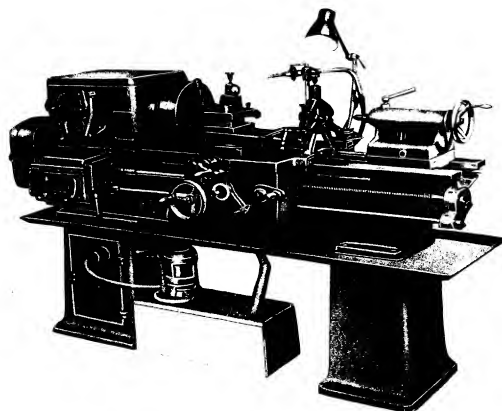
The lead screw feeding the carriage is mounted in middle of the machine bed. Such a central arrangement of the lead screw assures a smooth movement of the carriage.

The feed box provides an ample number of feeds and threads.

#### SPECIFICATIONS

Capacity		Tailstock	
Height of centers, mm	125	Taper hole in spindle	Morse No. 2
Distance between centers, mm	270	Maximum travel of spindle, mm	80
Swing over bed, mm	240	Setover on side, mm	±10
Swing over cross slide, mm	155	Speeds and Feeds	
Bar capacity, mm:		Number of spindle speeds	16
round stock held in chuck	22	Range of spindle speeds, r.p.m.	100-2000
round stock held in collet	14	Number of longitudinal feeds	25
Maximum length turned, mm	190	Range of longitudinal feeds, mm per revolution of spindle	0.06-2.5
Number of Metric threads that can be cut	13	Drive	
Threads that can be cut:		220/380 volt, 3 phase, 50 cycle A.C. motor:	
Metric, pitch in mm	0.25-2.5	Main drive:	
		power, kW	1.0
		speed, r.p.m.	1500
		Coolant pump:	
		power, kW	0.125
		speed, r.p.m.	3000
Carriage		Space Occupied	
Maximum travel of carriage, mm:		Floor space, mm	1100 x 680
longitudinal	190	Height of machine, mm	1230
cross	135	Weight	
Spindle		Net weight, kg	approx. 470
Diameter of hole in spindle, mm	22		
Taper hole in spindle sleeve, Morse No. 3			

### TOOL ROOM LATHE MODEL 1615M



The 1615M Tool Room Lathe is designed for all general lathe- and screw-cutting works.

Change of spindle speeds are obtained through a headstock. Spindle has forward and reverse rotation.

Feeds and threads are obtained through the use of the feed box and pick-off gears.

Operating feed levers are so interlocked that the lead screw and feed rod cannot both be engaged at the same time.

The machine is motor driven.

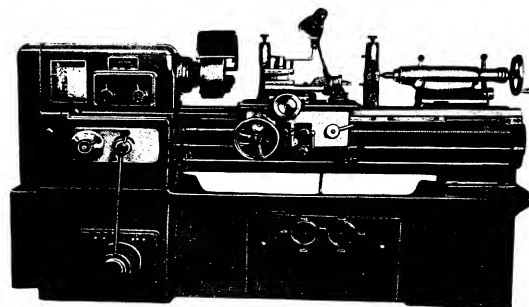


## SPECIFICATIONS

Capacity		Speeds and Feeds	
Height of centers, mm	155	Number of spindle speeds:	
Maximum distance between centers, mm	750	forward rotation	8
Bar capacity, mm	34	reverse rotation	4
Maximum swing over cross slide, mm	150	Range of spindle speeds, r.p.m.:	
Maximum swing over bed ways, mm	320	forward rotation	44—1000
Maximum length of turning, mm	700	reverse rotation	244—993
Threads that can be cut:		Number of longitudinal and cross feeds	90
Metric, pitch in mm	0.5—12	Range of feeds, mm per revolution of spindle:	
English, threads per inch	60—1.75	longitudinal	0.06—2.72
Module	0.5—6	cross	0.025—1.1
Distance from tool bottom to center line, mm	20	Drive	
		220/380 volt, 3 phase, 50 cycle A.C. motors:	
		Main drive:	
		power, kW	2.8
		speed, r.p.m.	1500
		Coolant pump:	
		power, kW	0.1
		speed, r.p.m.	3000
		Space Occupied	
		Floor space, mm	1960×920
		Height of machine, mm	1145
		Weight	
		Net weight, kg	approx. 850

## TOOL ROOM LATHE

MODEL 1616



The 1616 Tool Room Lathe is designed for all general lathe- and screw-cutting works. Rigid construction, high speeds of spindle, accuracy and ease of operation are the outstanding features of this machine.

Change of spindle speeds are obtained through a gear box mounted in the base of the machine.

Spindle has forward and reverse rotation.

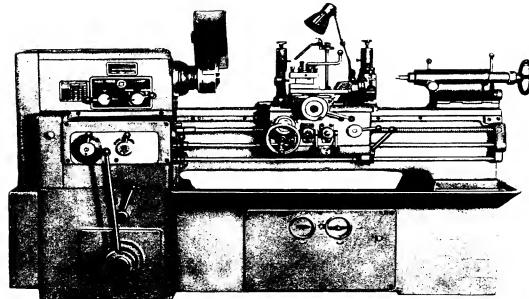
Feeds and threads are obtained through the use of the feed box and pick-off gears.

The apron mechanism has an interlocking device which prevents the engagement of the lead screw and the feed rod at the same time.



## SPECIFICATIONS

Capacity		Tailstock	
Height of centers, mm	160	Taper hole in spindle	Morse No. 4
Maximum distance between centers, mm	750	Maximum travel of spindle, mm	95
Bar capacity, mm	29	Setover on side, mm	±10
Swing over cross slide, mm	175	Speeds and Feeds	
Swing over bed ways, mm	320	Number of spindle speeds (forward and reverse)	12
Threads that can be cut:		Range of spindle speeds, r.p.m.	44—1980
Metric, pitch in mm	0.5—9	Range of feeds, mm per revolution of spindle:	
English, threads per inch	38—2	longitudinal	0.06—3.34
Module	0.5—9	cross	0.044—2.46
Carriage		Drive	
Maximum travel (power or manual feed), mm:		220/380 volt, 3 phase, 50 cycle A.C. motors:	
longitudinal	850	Main drive:	
cross	210	power, kW	4.5
Distance from tool bottom to center line, mm	20	speed, r.p.m.	1500
Maximum distance from center line to the face of tool holder, mm	185	Coolant pump:	
Maximum size of tool, mm	20×20	power, kW	0.1
		speed, r.p.m.	3000
		Lubricating pump:	
		power, kW	0.125
		speed, r.p.m.	3000
Spindle		Space Occupied	
Diameter of hole in spindle, mm	30	Floor space, mm	2335×850
Taper hole in spindle	Morse No. 5	Height of machine, mm	1275
		Weight	
		Net weight, kg	approx. 1850

PRECISION TOOL ROOM LATHE  
MODEL 1616II

The 1616II Tool Room Lathe is designed for all general lathe work, as well as for cutting Metric, English and Module threads. Simplicity of design, rigid construction, accuracy and ease of operation are the outstanding features.

Change of spindle speeds are obtained through a change speed gear box mounted in the bed and countershaft spur wheels in the headstock. Feeds and threads are obtained from the feed gear box and change gears.

For cutting accurate threads provision is made in feed gear box for direct engagement of the lead screw to the spindle through change gears only, by-passing the feed box.

The cross slide is equipped with a device for quickly withdrawing the tool from the threads when cutting.

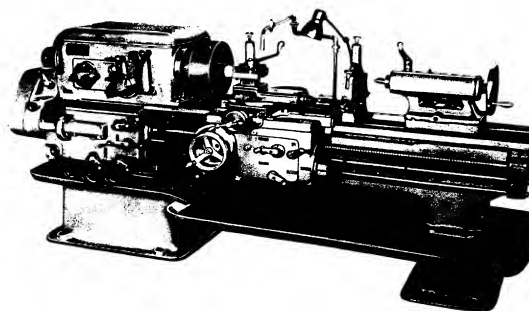
The apron of the machine has an interlocking arrangement which prevents simultaneous engagement of feed from the lead screw and feed shaft.





## SPECIFICATIONS

Capacity		Tailstock	
Height of centers, mm	160	Taper hole in spindle	Morse No. 4
Maximum distance between centers, mm	750	Maximum travel of spindle, mm	95
Bar capacity, mm	29	Setover on side, mm	±10
Swing over carriage, mm	175	Speeds and Feeds	
Swing over bed ways, mm	320	Number of spindle speeds (forward and reverse)	24
Threads that can be cut:		Range of spindle speeds, r.p.m.	19—1415
Metric, pitch in mm	0.5—9	Range of feeds, mm per revolution of spindle:	
English, threads per inch	38—2	longitudinal (carriage)	0.03—1.67
Module	0.5—9	cross (cross slide)	0.02—1.24
Carriage		Drive	
Maximum travel (mechanically or by hand), mm:		220/380 volt, 3 phase, 50 cycle A.C. motors:	
longitudinal (carriage)	850	Main drive:	
cross (cross slide)	210	power, kW	2.8
Height from tool bottom to center line, mm	20	speed, r.p.m.	1500
Maximum distance from center line to edge of tool block, mm	185	Coolant pump:	
Maximum size of tool, mm	20×20	power, kW	0.1
Spindle		speed, r.p.m.	3000
Spindle hole diameter, mm	30	Lubricating pump:	
Taper hole in spindle	Morse No. 5	power, kW	0.125
		speed, r.p.m.	3000
		Space Occupied	
		Floor space, mm	2355×850
		Height of machine, mm	1275
		Weight	
		Net weight, kg	approx. 1850

TOOL ROOM LATHE  
MODEL 1A62

The 1A62 Tool Room Lathe is a universal machine designed for all general lathe- and screw-cutting works.

Rigid construction, accuracy and durability for long years of service are the outstanding features.

Change of spindle speeds are obtained through a headstock.

All feeds and threads are obtained by use of feed box and pick-off gears.

Interlocking device prevents the engagement of the lead screw and the feed rod at the same time.

The longitudinal feed, when working from the feed rod, can be tripped automatically by means of an adjustable stop.

The machine is motor driven.

## SPECIFICATIONS

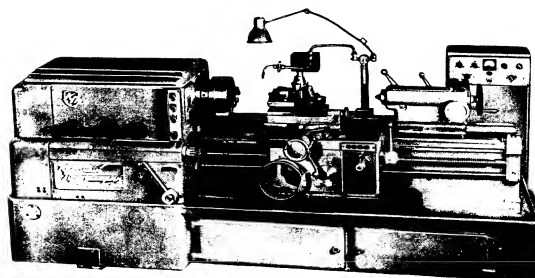
Capacity		Maximum length of turning (according to distance between centers), mm	
Height of centers, mm	202	mm	650; 900; 1400
Maximum distance between centers, mm	750; 1000; 1500	Threads that can be cut:	
Bar capacity, mm	36	Metric, pitch in mm	1—192
Maximum swing over cross slide, mm	210	English, threads per inch	24—2
Maximum swing over bed ways, mm	400	Module	0.5—48
		Diametral pitch	96—1



<b>Carriage</b>	
Maximum travel (power or manual feed), mm:	
longitudinal (according to distance between centers) . . . 630; 900; 1400	
cross . . . . . 280	
Distance from tool bottom to center line, mm . . . . . 25	
Maximum swivel of top slide, deg. . . ±45	
<b>Spindle</b>	
Diameter of hole in spindle, mm . . . . 38	
Taper hole in spindle . . . . . Morse No. 5	
<b>Tailstock</b>	
Taper hole in spindle . . . . . Morse No. 4	
Maximum travel of spindle, mm . . . . 150	
Setover on side, mm . . . . . ±15	
<b>Speeds and Feeds</b>	
Number of spindle speeds:	
forward rotation . . . . . 21	
reverse rotation . . . . . 12	
Range of spindle speeds, r.p.m.:	
forward rotation . . . . . 11.5—1200	
reverse rotation . . . . . 18—1520	
Number of longitudinal and cross feeds . . . . . 35	
Range of feeds, mm per revolution of spindle:	
longitudinal . . . . . 0.082—1.59	
cross . . . . . 0.027—0.522	
<b>Drive</b>	
220/380 volt, 3 phase, 50 cycle A.C. motors:	
Main drive:	
power, kW . . . . . 7	
speed, r.p.m. . . . . 1500	
Coolant pump:	
power, kW . . . . . 0.125	
speed, r.p.m. . . . . 3000	
<b>Space Occupied</b>	
Overall length (according to distance between centers), mm . . 2510; 2650; 3170	
Overall width, mm . . . . . 1580	
Height of machine, mm . . . . . 1210	
<b>Weight</b>	
Net weight (according to distance between centers),	
kg . . . . . approx. 1930; 2000; 2145	

## HIGH SPEED TOOL ROOM LATHE

### MODEL 1620



The 1620 High Speed Tool Room Lathe is a rigid, high power universal machine designed for general lathe- and screw-cutting work. Metric, English, Module and Diametral pitch threads left- and right-hand, single and multiple with regular and coarse pitch as well as spiral on faces can be cut on this machine.

The machine is equipped with electric copying device working from template or master work piece.

Spindle speeds are steplessly variable, change of speed being accomplished through the push-button station.

Feed box is of closed type and without change gears. Feeds are selected by turning of one knob. Carriage and slide are provided with rapid traverse in both directions.

Engaging and disengaging of slide feeds and rapid traverse are accomplished by one lever.

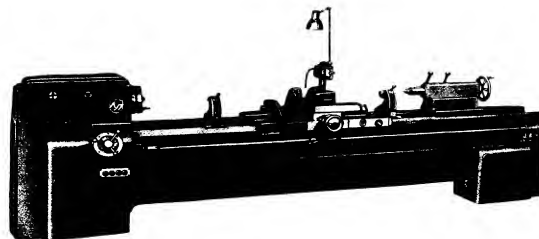


## SPECIFICATIONS

<b>Capacity</b>		cross	0.08—1.52
Maximum swing over bed, mm	400	longitudinal (coarse feed):	
Maximum swing over cross slide, mm	230	at spindle speeds 50—190 r.p.m.	
Maximum length of work, mm	1600	1.28—5.1	
Bar capacity, mm	45	at spindle speeds 190—750 r.p.m.	
Threads that can be cut:		0.4—4.9	
Metric, pitch in mm	1—15; 16—240	Rapid traverse of carriage and slides,	3.8
English, threads per inch	30—2	m/min.	
Module, module in mm	0.25—3.75;		
Diametral pitch	4—60	<b>Drive</b>	
	8—120; 7—1	Power of all motors, kW	16.25
<b>Speeds and Feeds</b>		<b>Space Occupied</b>	
Range of spindle speeds, r.p.m.	18—3000	Floor space, mm	3180×1315
Range of feeds, mm per revolution		Height of machine, mm	1285
of spindle:		<b>Weight</b>	
longitudinal	0.08—1.52	Net weight, kg	approx. 4000

## HIGH PRECISION LEAD SCREW CUTTING LATHE

### MODEL 1622



The 1622 High Precision Lathe is designed for finish cutting of high precision lead screws.

The bed of the machine is of rigid construction with diagonal ribs.

Lead screw of the machine is mounted between the bed ways and supported on anti-friction bearings.

The machine is equipped with a device provided for correcting of cycle accumulated pitch errors of the machine lead screw.

The spindle of the machine is driven by two-speed electric motor through a gear train and two Vee belt drives.

The lead screw is driven from the spindle through two pairs of change gears mounted on the spindle and lead screw ends.

The carriage has long Vee ways and is coupled with the machine lead screw through a non-split nut with the lever for the correction device. Cross and top slides are fed by hand through a feed screws.

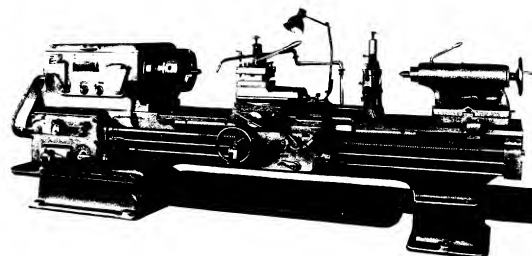
Follow rest is mounted on the carriage.

The machine is supplied with tailstock and steady rest.



## SPECIFICATIONS

Capacity		Tailstock	
Height of centers, mm	225	Taper hole in spindle	Morse No. 5
Maximum distance between centers, mm	2500	Maximum travel of spindle, mm	200
Diameter of thread that can be cut, mm:		Speeds	
minimum	20	Number of spindle speeds:	
maximum	85	forward rotation	6
Maximum length of thread cut, mm	2500	reverse rotation	6
Pitch of Metric thread that can be cut, mm:		Range of spindle speeds, r.p.m.:	
minimum	3	forward rotation	4—40
maximum	12	reverse rotation	6—80
Cross Slide		Drive	
Maximum travel, mm:		220/380 volt, 3 phase, 50 cycle A.C. motors:	
cross (manual feed)	75	Main drive (two-speed):	
longitudinal (power feed)	2500	power, kW	3/4.5
Spindle		speed, r.p.m.	750/1500
Diameter of hole in spindle, mm	22	Coolant pump:	
Taper hole in spindle	Morse No. 5	power, kW	0.125
		speed, r.p.m.	3000
		Space Occupied	
		Floor space, mm	4420×1275
		Height of machine, mm	1250
		Weight	
		Net weight, kg	approx. 3300

ENGINE LATHE  
MODEL 1D63A

The 1D63A Engine Lathe is designed for all general lathe- and screw-cutting works.

Change of spindle speeds are obtained through a headstock. Spindle has forward and reverse rotation and mechanical brake.

Feeds and threads are obtained through the use of the feed box and pick-off gears.

There is a safety device preventing any breakage in the feed mechanism due to overloading.

The longitudinal feed, when working from the feed rod, can be tripped automatically by means of an adjustable stop.

The operating levers on the apron are so interlocked that the lead-screw, longitudinal or cross feeds cannot be engaged at the same time.

The machine is motor driven.

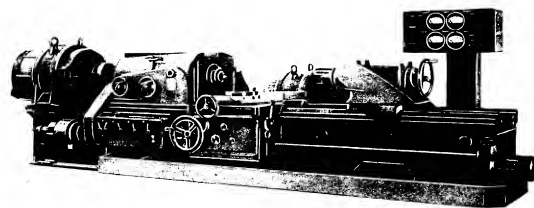
## SPECIFICATIONS

Capacity		Threads that can be cut:	
Height of centers, mm	300	Metric, pitch in mm	1—224
Maximum distance between centers, mm	1500; 3000	English, threads per inch	28—2
Bar capacity, mm	68	Module	0.25—56
Maximum swing over cross slide, mm	345	Carriage	
Maximum swing over bed ways, mm	615	Maximum longitudinal travel (according to distance between centers), mm:	
Maximum length of turning (according to distance between centers), mm	1310; 2810	power feed	1310; 2810
		manual feed	1510; 3010



Maximum cross travel (power and manual) mm	390	Number of longitudinal and cross feeds	26
Distance from tool bottom to center line, mm	32.5	Range of feeds, mm per revolution of spindle:	
<b>Compound Rest</b>		longitudinal	0.15—2.65
Maximum travel of tool slide, mm	200	cross	0.05—0.9
Maximum angle of swivel, deg.	±60	<b>Drive</b>	
<b>Spindle</b>		220/380 volt, 3 phase, 50 cycle A.C. motors:	
Diameter of hole in spindle, mm	70	Main drive:	
Taper hole in spindle, Metric 80		power, kW	10
Taper hole in spindle sleeve, Morse No. 5		speed, r.p.m.	1500
<b>Tailstock</b>		Coolant pump:	
Taper hole in spindle, Morse No. 5		power, kW	0.125
Maximum travel of spindle, mm	205	speed, r.p.m.	3000
Setover on side, mm	±15	<b>Space Occupied</b>	
<b>Speeds and Feeds</b>		Overall length (according to distance between centers), mm	3610; 5110
Number of spindle speeds	18	Overall width, mm	1690
Range of spindle speeds, r.p.m.:		Height of machine, mm	1275
forward	14—750	<b>Weight</b>	
reverse	22—945	Net weight (according to distance between centers), kg	approx. 3330, 3980

## LABORATORY LATHE MODEL JI220



The JI220 Laboratory Lathe has been designed for the research in the field of the dynamics of cutting as well as for carrying out life tests on carbide tipped tools.

The machine has ample drive power and is provided with wide ranges of speeds and feeds.

The machine is equipped with suitable instruments for measuring the cutting forces, surface speeds, feeds and the non-uniformity of the machine run. This allows to carry out tests on speeds and feeds which secure a full utilization of the cutting properties of tools to be tested.

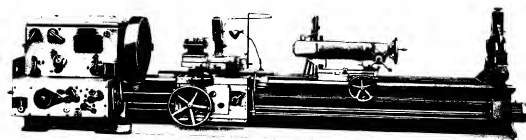
### SPECIFICATIONS

<b>Capacity</b>		Range of feeds, mm per revolution of spindle:	
Height of centers, mm	350	longitudinal	0.08—4
Distance between centers, mm	1500	cross	0.04—2
Maximum swing, mm:		<b>Drive</b>	
over cross slide	400	D.C. motors:	
over bed ways	700	power range of main drive motor, kW	29—115
over gap	1000	power of feed drive motor, kW	4.4
<b>Carriage and Tailstock</b>		power of rapid traverse motor, kW	2.8
Maximum travel, mm:		<b>Space Occupied</b>	
carriage	470	Floor space, mm	6000×2000
tailstock spindle	150	Height of machine, mm	1600
<b>Speeds and Feeds</b>		<b>Weight</b>	
Range of spindle speeds, r.p.m.	21—1500	Net weight, kg	approx. 15000



## ENGINE LATHE

### MODEL 1A64



The 1A64 Engine Lathe is of the universal type and is designed for a wide variety of lathe work and for cutting Metric, English and Module threads.

The feed gear box is of the enclosed type and provides for cutting all standard threads without change gears.

For cutting accurate threads provision is made for directly engaging the lead screw, by-passing the feed gear box. The machine has rapid travel of the carriage and cross slide.

To special order, the machine can be equipped with an electrical profiling device for machining irregular contours using a work piece or template as a master.

### SPECIFICATIONS

Capacity		Compound Rest	
Height of centers, mm	400	Maximum travel of tool slide, mm	240
Maximum distance between centers, mm	3000	Maximum angle of swivel, deg.	180
Maximum swing over bed ways, mm	800	Spindle	
Maximum diameter that can be turned over carriage, mm	450	Diameter of hole in spindle, mm	95
Threads that can be cut:		Taper of hole in spindle	1:20
Metric, pitch in mm	1—120	Taper hole in spindle sleeve, Morse No. 6	
English, threads per inch	28—0.25	Tailstock	
Module	0.5—30	Taper hole in spindle, Morse No. 5	
Carriage		Maximum travel of spindle, mm	300
Maximum longitudinal travel (power and manual), mm	3000	Setover on side, mm	±15
Maximum cross travel (power and manual), mm	610	Speeds and Feeds	
Distance from tool bottom to center line, mm	45	Number of spindle speeds	24
		Range of spindle speeds, r.p.m.	7.1—750
		Number of longitudinal and cross feeds	32



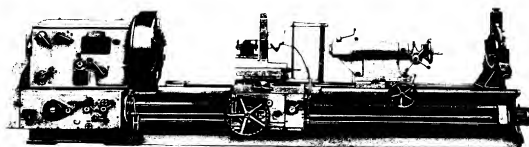
<b>Range of feeds per revolution of spindles, mm:</b>	
longitudinal .....	0.2—3.05
cross slide .....	0.7—1.04
<b>Rapid traverse, m/min.:</b>	
carriage .....	2.85
cross slide .....	1.15
<b>Drive</b>	
220/380 volt, 3 phase, 50 cycle A.C. motors:	
Main drive:	
power, kW .....	20
speed, r.p.m. ....	1500

<b>Rapid traverse drive:</b>	
power, kW .....	1.7
speed, r.p.m. ....	1500
<b>Coolant pump:</b>	
power, kW .....	0.15
speed, r.p.m. ....	3000

<b>Space Occupied</b>	
Floor space, mm .....	6280×2000
Height of machine, mm .....	1660
<b>Weight</b>	
Net weight, kg .....	approx. 11700

## ENGINE LATHE

### MODEL 165



The 165 Engine Lathe is designed for all general lathe work and for cutting Metric, English and Module threads.

The spindle is driven from an individual electric motor through Vee belts and the change speed gear box.

Change of spindle speeds are obtained through a headstock.

The feed gear box is enclosed and provides for cutting all standard thread without change gears.

For cutting accurate threads provision is made for engaging the lead screw to the change gear train by-passing the speed gear box.

The machine is equipped with rapid power traverse to both the cross slide and carriage.

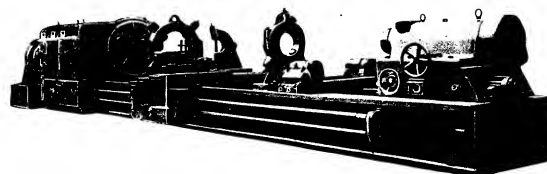
### SPECIFICATIONS

<b>Capacity</b>		<b>Range of feeds, mm per revolution of spindle:</b>	
Maximum swing over bed ways, mm	1000	longitudinal .....	0.204—3.05
Maximum distance between centers, mm	3000	cross .....	0.069—1.038
Maximum diameter that can be turned over carriage, mm	650	<b>Rapid traverse, m/min.:</b>	
<b>Threads that can be cut:</b>		carriage .....	2.3
Metric, pitch in mm	1—120	cross slide .....	0.8
English, threads per inch	.30—0.25	<b>Drive</b>	
Module .....	0.5—60	Power of electric motor, kW .....	28
<b>Speeds and Feeds</b>		<b>Space Occupied</b>	
Number of spindle speeds .....	24	Floor space .....	6255×2280
Range of spindle speeds, r.p.m. ....	5—500	Height of machine, mm .....	1760
		<b>Weight</b>	
		Net weight, kg .....	approx. 12500



## ENGINE LATHE

### MODEL 1660



The 1660 Engine Lathe is designed for all general lathe work, as well as for cutting threads. Machining is performed by cutting tools, fastened in the tool head of the cross slide.

Longitudinal and cross feeds are obtained from the feed gear box. Metric, English and Module threads are obtained through the use of the feed gear box and lead screw without change gears.

The longitudinal travel of the carriage is engaged and disengaged by a clutch on the feed shaft.

Spindle speeds are varied by regulating the D.C. variable-speed electric motor of the main drive and by means of the change speed gear box, arranged in the headstock. Speeds are changed by hydraulic means.

The tailstock is equipped with a live center.

The carriages and tailstock are provided with rapid power traverse from separate electric motors.

The machine has push-button controls.

#### SPECIFICATIONS

Capacity		Range of external tapers that can be turned	
Height of center, mm	650	turned	0.001—0.06
Maximum distance between centers, mm	6300	Maximum weight of work piece, tons	30
Maximum swing over bed ways, mm	1250	Carriages	
Maximum diameter that can be turned, mm:		Number of carriages	1
over carriage	950	Standard size of tool shank, mm	40×60
over bed	1250	Swivel of tool slide	±45°
Maximum length of turning, mm	6300	Steady Rests	
Threads that can be cut:		Range of work diameters accommodated, mm:	
Metric, pitch in mm	1—60	open	600—950
English, threads per inch	30—0.5	closed	150—350
Module	0.25—15		





closed .....	350—600	220/380 volt, 3 phase, 50 cycle A.C. motors
semi-closed .....	100—200	for auxiliary drives:
<b>Speeds and Feeds</b>		number .....
Range of spindle speeds, r.p.m. ....	315—200	total power, kW .....
Number of longitudinal and cross feeds .....	48	
Range of feeds, mm per revolution of spindle:		
longitudinal (carriage) ..	0.19—11.4	
cross (cross slide) .....	0.075—4.5	
Rapid traverse of carriage, m/min. ....	3	
<b>Drive</b>		<b>Space Occupied</b>
D.C. variable-speed main drive motor:		Floor space, mm .....
power, kW .....	60	Height of machine, mm .....
speeds, r.p.m. ....	300—1200	
		<b>Weight</b>
		Net weight (with accessories and electrical equipment),
		kg .....

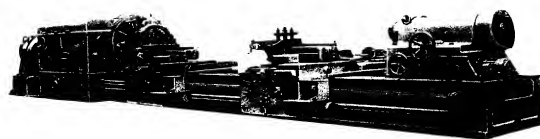
220/380 volt, 3 phase, 50 cycle A.C. motors  
for auxiliary drives:  
number ..... 5  
total power, kW ..... 9

Floor space, mm ..... 13200×2340  
Height of machine, mm ..... 2060

Net weight (with accessories and electrical equipment),  
kg ..... approx. 51450

## ENGINE LATHE

### MODEL 1660Γ



The 1660Γ Engine Lathe is designed for all general lathe work, as well as for cutting threads.

Machining is performed by cutting tools, fastened in the tool head of the cross slide.

Longitudinal and cross feeds are obtained from the feed gear box. Metric, English and Module threads are obtained through the use of the feed gear box and lead screw without change gears.

The longitudinal travel of the carriage is engaged and disengaged by a clutch on the feed shaft.

Spindle speeds are varied by regulating the D.C. variable-speed electric motor of the main drive and by means of the change speed gear box, arranged in the headstock.

Speeds are changed by hydraulic means.

The tailstock is equipped with a live center.

The carriage and the tailstock are provided with rapid traverse from separate electric motors.

The machine is equipped with eight electric motors.

The machine has push-button controls.

### SPECIFICATIONS

Capacity		Threads that can be cut:	
Height of centers, mm .....	650	Metric, pitch in mm .....	1—60
Maximum distance between centers, mm .....	8300	English, threads per inch .....	30—0.5
Maximum swing over bed ways, mm .....	1250	Module .....	0.25—15
Maximum diameter that can be turned, mm:		Range of external tapers that can be turned .....	0.001—0.06
over carriage .....	950	Maximum weight of work piece, tons .....	30
over bed .....	1250	<b>Carriages</b>	
Maximum length of turning, mm .....	8300	Number of carriages .....	2
		Standard size of tool shank, mm ..	40×60
		Swivel of upper part of tool slide ..	±45°



**Steady Rests**

Range of work diameters accommodated, mm:	
open .....	600—950
closed .....	150—350
closed .....	350—600
semi-closed .....	100—200

**Speeds and Feeds**

Range of spindle speeds, r.p.m. . .	3.15—200
Number of longitudinal and cross feeds .....	48
Range of feeds, mm per revolution of spindle:	
longitudinal (carriage) . .	0.19—11.4
cross (cross slide) .....	0.075—4.5
Rapid traverse of carriage, m/min. . .	3

**Drive**

D.C. variable-speed main drive motor:	
power, kW .....	60
speeds, r.p.m. ....	300—1200
220/380 volt, 3 phase, 50 cycle A.C. motors for auxiliary drives:	
number .....	7
total power, kW .....	12.5

**Space Occupied**

Floor space, mm . . . . .	15200×2340
Height of machine, mm .....	2060

**Weight**

Net weight (with accessories and electrical equipment), kg . approx.	58750
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## HEAVY DUTY LATHE

### MODEL 1670



The 1670 Heavy Duty Lathe is designed for all general lathe work, as well as for cutting short Metric and English threads.

Machining is performed by cutting tools, fastened in the tool heads of the cross slides. Longitudinal and cross feeds are obtained from the feed box. The longitudinal travel of the carriage is engaged and disengaged by a clutch on the feed shafts.

Spindle speeds are varied by regulating the D.C. variable-speed electric motor of the main drive and by means of the speed change gears, arranged in the headstock.

Speeds are changed hydraulically.

The tailstock is equipped with a live center.

The carriages and the tailstock are provided with rapid traverse from separate electric motors.

The machine is equipped with eleven electric motors.

The machine has push-button controls.

**SPECIFICATIONS**

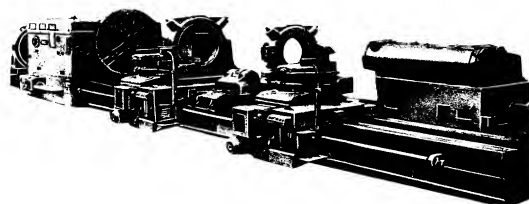
<b>Capacity</b>		Maximum length of threads that can be cut, mm .....	900
Height of centers, mm .....	800	Maximum weight of work piece, tons	50
Maximum distance between centers, mm .....	8500	<b>Carriages</b>	
Maximum swing over bed ways, mm	1580	Number of carriages:	
over carriage, mm .....	1120	front .....	2
Maximum diameter that can be turned		rear .....	1
Threads that can be cut:		Standard size of tool shanks, mm . .	80×80
Metric, pitch in mm .....	1—48	Maximum longitudinal travel of tool slide, mm .....	900
English, threads per inch .....	1—32	Swivel of tool slide .....	90°



<b>Steady Rests</b>	
Range of work diameters accommodated, mm:	
closed .....	350—600
closed .....	600—950
open .....	950—1425
<b>Speeds and Feeds</b>	
Range of spindle speeds, r.p.m. . . . .	2.5—160
Range of feeds, mm per revolution of spindle:	
longitudinal (carriage) .....	0.2—19
transversal (cross slide) . . . . .	0.09—7.78
<b>Rapid traverse, in/min:</b>	
carriages .....	2.6
tailstock .....	3
<b>Drive</b>	
D.C. variable-speed main drive motor:	
power, kW .....	100
speed, r.p.m. ....	300—1200
<b>Space Occupied</b>	
Floor space, mm .....	17300×4060
Height of machine, mm .....	2500
<b>Weight</b>	
Net weight, kg .....	approx. 132000

## HEAVY DUTY LATHE

### MODEL 1680



The 1680 Heavy Duty Lathe is designed for all general lathe work as well as for cutting short Metric and English threads.

Machining is performed by cutting tools, fastened in the tool heads of the cross slides. Longitudinal and cross feeds are obtained from the feed gear box.

The longitudinal travel of the carriage is engaged and disengaged by a clutch on the feed shaft. Spindle speeds are varied by regulating the D.C. variable-speed electric motor of the main drive and by means of the change speed gear box, arranged in the headstock.

Speeds are changed hydraulically.

The tailstock is equipped with a live center.

The carriages and tailstock are provided with rapid power travel from separate electric motors.

The machine is equipped with eleven electric motors.

The machine has push-button controls.

#### SPECIFICATIONS

<b>Capacity</b>		Maximum weight of work piece, tons	50
Height of centers, mm .....	1000	<b>Carriages</b>	
Distance between centers, mm .....	10000	Number of carriages:	
Maximum swing over bed ways, mm .....	1980	front .....	2
Maximum diameter that can be turned over carriage, mm .....	1650	rear .....	1
Threads that can be cut:		Standard size of tool shanks, mm . . .	80×80
Metric, pitch in mm .....	1—48	Maximum longitudinal travel of tool slide, mm .....	900
English, threads per inch . . . . .	1—32	Swivel of tool slide .....	90°
Maximum length of threads that can be cut, mm .....	900		



**Steady Rests**

Range of work diameters accommodated, mm:

closed	350—600
closed	600—950
open	950—1425

**Speeds and Feeds**

Range of spindle speeds, r.p.m. .... 2—128  
 Range of feeds, mm per revolution of spindle:

longitudinal (carriage)	0.2—19
cross (cross slide)	0.09—7.78

**Drive**

D.C. variable-speed main drive motor:

power, kW	100
speeds, r.p.m.	300—1200

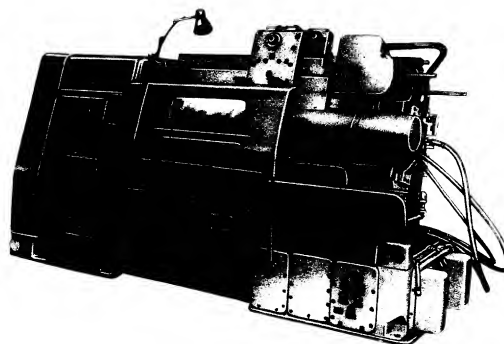
**Space Occupied**

Floor space, mm ..... 18260×4060  
 Height of machine, mm ..... 2750

**Weight**

Net weight (with accessories and electrical equipment), kg., approx. 141500

## HYDRAULIC MULTITool SEMI-AUTOMATIC LATHE

**MODEL 1721**

The 1721 Semi-Automatic Lathe is designed for machining forgings, castings, or bars held between centers. Rigid construction, ample power, high spindle speeds, accuracy and ease of operation, are the outstanding features of the machine.

The work is driven from an independent electric motor through a change speed gear box. Spindle speeds are provided by shifting and change gears.

The feeds of the cross slides, as well as tailstock spindle travel, and clamping are operated hydraulically. Feed range of cross slides are infinitely variable, changes being obtained by a throttle valve.

The longitudinal (lower) slide is fitted with a device for receding the tools at the end of the working cycle. The machine operates on an automatic cycle, comprising: simultaneous rapid approach of all slides, working stroke and separate rapid retraction of slides at the end of the working stroke. Any one of the slides can be excluded from the working cycle.

During the setting-up the travel of both slides is effected alternately by turning one handle, besides the slides can travel either at working or at rapid travel rates.



The machine is provided with an interlocking arrangement, preventing the retraction of the tailstock spindle during rotation of the work.

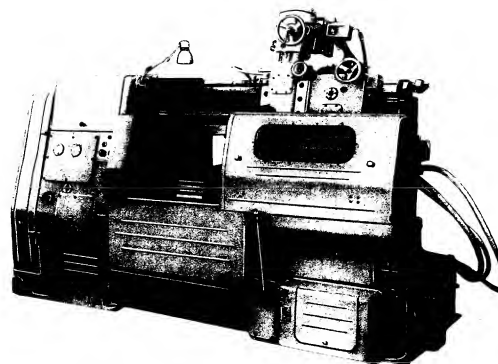
The machine is equipped with a safety overloading device for withdrawing the cross tool slides from the work.

#### SPECIFICATIONS

Capacity		Drive	
Height of centers, mm	185	220/380 volt, 3 phase, 50 cycle	
Maximum swing over lower slide, mm	460	A. C. motors:	
Maximum diameter that can be machined, mm	200	Main drive:	
Distance between centers, mm	800; 1250	Power, kW:	
<b>Headstock and Tailstock</b>		for light work	14
Diameter of spindle flange, mm	210	for medium work	20
Taper hole in headstock spindle, Metric	80	for heavy work	28
Taper hole in tailstock spindle, Morse No.	5	Speed, r.p.m.	1500
Maximum travel of tailstock spindle, mm	175	Hydraulic pump drive:	
<b>Cross Slides</b>		power, kW	4.5
Number of slides	2	speed, r.p.m.	1000
Longitudinal travel of slides, mm:		<b>Space Occupied</b>	
infed at 30°	290	Floor space, mm:	
infed at 40°	230	for 800 mm between centers	2930×1345
Cross travel of slides, mm	85	for 1250 mm between centers	3360×1345
<b>Speeds and Feeds</b>		Height of machine, mm	1760
Number of spindle speeds	14	<b>Weight</b>	
Range of spindle speeds, r.p.m.	71—1410	Net weight, kg:	
Range of slide feeds (infinitely variable), mm/min:		for 800 mm between centers	approx. 4800
longitudinal	20—700	for 1250 mm between centers	approx. 5500
cross	12—400		

### HYDRAULIC MULTITool SEMI-AUTOMATIC COPYING LATHE

MODEL 1722



The 1722 Semi-Automatic Copying Lathe is designed for copying contours and stepped shafts held between centers. Rigid construction, ample power, high spindle speeds, accuracy and ease of operation are the outstanding features of the machine.

The work is driven from an independent electric motor through a change speed gear box. Spindle speeds are provided by shifting and change gears.

The copying slide of the machine is equipped with a hydraulic tracing device, which provides for machining the work in accordance with the template.

The machine can be equipped with two facing cross slides for cutting



grooves, which cannot be machined by the copying slide due to the form of the cutting tools.

The feeds of cross slides, as well as tailstock spindle travel and clamping are operated hydraulically. Feed range of cross slides are infinitely variable, changes being obtained by a throttle valve.

The machine operates on an automatic cycle, comprising: simultaneous rapid approach of all slides, working stroke and separate rapid retraction of slides at the end of the working stroke. Any one of the slides can be excluded from the working cycle.

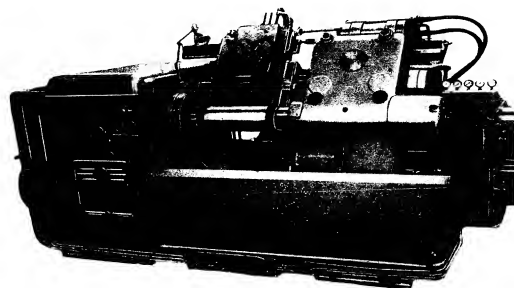
During the setting-up, the travel of both slides is effected alternately by turning a handle, besides, the slides can travel either at working or at rapid travel rates. The machine is provided with an interlocking arrangement, preventing the retraction of the tailstock spindle during rotation of the work.

The machine is equipped with a safety overloading device for withdrawing the cross tool slides from the work. The hydraulic system of the machine ensures constant feed of the copying slide, independent of the form of the work.

#### SPECIFICATIONS

Capacity	Drive
Height of centers, mm ..... 185	220/380 volt, 3 phase, 50 cycle
Maximum swing over bed, mm ..... 490	A. C. motors:
Maximum diameter that can be machined, mm ..... 200	Main drive:
Distance between centers, mm .. 800; 1250	Power, kW:
<b>Headstock and Tailstock</b>	for light work ..... 14
Diameter of spindle flange, mm ..... 210	for medium work ..... 20
Taper hole in headstock spindle Metric 80	for heavy work ..... 28
Taper hole in tailstock spindle Morse No. 5	Speed, r.p.m. .... 1500
Maximum travel of tailstock spindle, mm ..... 175	Hydraulic pump drive:
	power, kW ..... 4.5
	speed, r.p.m. .... 1000
<b>Copying Slide</b>	<b>Space Occupied</b>
Working (longitudinal) travel of copying slide (acc. to distance between centers), mm ..... 760; 1200	Floor space, mm:
Cross travel of copying slide, mm ... 110	for 800 mm between centers ..... 2930×1345
<b>Cross Slides</b>	for 1250 mm between centers ..... 3700×1345
Number of cross slides ..... 2	Height of machine, mm ..... 2100
Working travel of facing slides, mm . 100	<b>Weight</b>
<b>Speeds and Feeds</b>	Net weight, kg:
Number of spindle speeds ..... 14	for 800 mm between centers ..... approx. 5500
Range of spindle speeds, r.p.m. .. 71—1410	for 1250 mm between centers ..... approx. 6000
Range of feeds of copying slide (infinitely variable), mm/min. ... 20—700	

### HYDRAULIC MULTITool SEMI-AUTOMATIC LATHE MODEL 1731



The 1731 Semi-Automatic Lathe is designed for machining forgings, castings, or bars held between centers. Rigid construction, ample power, high spindle speeds, accuracy and ease of operation, are the outstanding features of the machine.

The work is driven from an independent electric motor through a change speed gear box. Spindle speeds are provided by shifting and change gears.

The feeds of the cross slides, as well as tailstock spindle travel, and clamping are operated hydraulically. Feed range of cross slides are infinitely variable, changes being obtained by a throttle valve.

The longitudinal (lower) slide is fitted with a device for receding the tools at the end of the working cycle. The machine operates on a semi-automatic cycle, comprising: simultaneous rapid approach of all slides, working stroke and separate rapid retraction of slides at the end of the working stroke. Any one of the slides can be excluded from the working cycle.

During the setting-up the travel of both slides is effected alternately by turning one handle, besides the slides can travel either at working or at rapid travel rates.



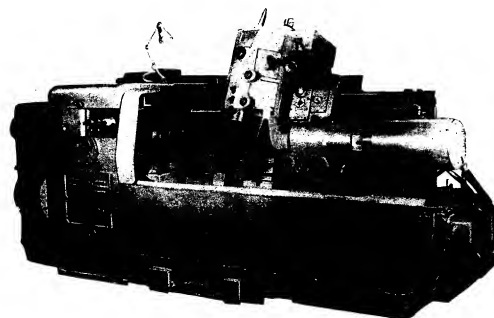
The machine is provided with an interlocking arrangement, preventing the retraction of the tailstock spindle during rotation of the work.

The machine is equipped with a safety overloading device for withdrawing the cross tool slides from the work.

#### SPECIFICATIONS

Capacity		Speeds and Feeds	
Maximum swing, mm:		Number of spindle speeds	26
over bed	580	Range of spindle speeds, r.p.m.	56—1000
over carriage of upper slide	435	Range of slide feeds, mm/min:	
Maximum diameter that can be machined, mm	320	lower	13—800
Distance between centers, mm:		upper	4—340
minimum	180	Drive	
maximum	870	Power of main drive motor, kW	20—40
Cross Slides		Space Occupied	
Number of slides	2	Floor space, mm	3500×1650
Working travel of lower slide, mm	350	Height of machine, mm	1825
Cross travel of lower slide	85 mm plus 130 mm (by adjustment)	Weight	
Working travel of upper slide, mm	100	Net weight, kg	approx. 8000

### HYDRAULIC MULTITool SEMI-AUTOMATIC COPYING LATHE MODEL 1731C



The 1731C Semi-Automatic Copying Lathe is designed for copying contours and stepped shafts held between centers. Rigid construction, ample power, high spindle speeds, accuracy and ease of operation are the outstanding features of the machine.

The work is driven from an independent electric motor through a change speed gear box. Spindle speeds are provided by shifting and change gears.

The copying slide of the machine is equipped with a hydraulic tracing device, which provides for machining the work in accordance with the template.

The machine can be equipped with one or two additional facing cross slides for cutting grooves, which cannot be machined by the copying slide due to the form of the cutting tools.

The feeds of cross slides, as well as tailstock spindle travel and clamping are operated hydraulically. Feed range of cross slides are infinitely variable, changes being obtained by a throttle valve.

The machine operates on a semi-automatic cycle, comprising: simultaneous rapid approach of all slides, working stroke and separate rapid retraction of slides at the end of the working stroke. Any one of the slides can be excluded from the working cycle.



During the setting-up, the travel of both slides is effected alternately by turning a handle, besides, the slides can travel either at working or at rapid travel rates. The machine is provided with an interlocking arrangement, preventing the retraction of the tailstock spindle during rotation of the work.

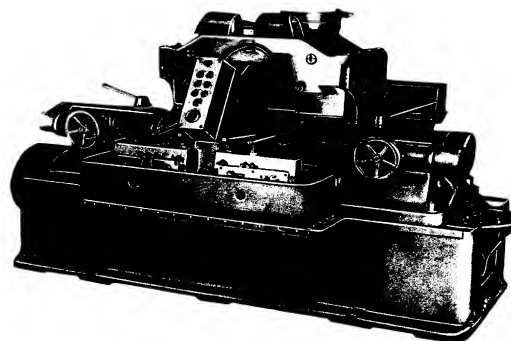
The machine is equipped with a safety overloading device for withdrawing the cross tool slides from the work. The hydraulic system of the machine ensures constant feed of the copying slide, independent of the form of the work.

#### SPECIFICATIONS

Capacity		Speeds and Feeds	
Maximum swing over bed, mm	565	Number of spindle speeds	26
Maximum diameter that can be machined, mm:		Range of spindle speeds, r.p.m.	56—1000
over copying slide	310	Range of feeds, mm/min.:	
over facing slide	160	copying slide	7.5—500
Distance between centers, mm:		facing slides	7.5—400
minimum (without facing slides)	180		
maximum	920		
Cross Slides		Drive	
Number of cross slides	from 1 to 3	Power of main drive motor, kW	20—55
Working (longitudinal) travel of copying slide, mm	750	Space Occupied	
Cross travel of copying slide, mm	80	Floor space, mm	3500×1800
Working travel of facing slides, mm	80	Height of machine, mm	2100
		Weight	
		Net weight, kg	approx. 8300

### MULTITOOL SEMI-AUTOMATIC CRANKSHAFT LATHE

MODEL 1A84



The 1A84 Semi-Automatic Multitool Crankshaft Lathe is designed for turning of main bearings, cheeks and bearings of crankshafts.

Machine works on the following automatic cycle: rapid approach of slides, rough, medium and finish feed, rapid return of slides to the starting position.

Feed change during the operating cycles is automatic.

Turning is accomplished by means of wide tools and cross feed. Tools are clamped on front and rear slides. Cycle of operation is controlled through a special electrical control panel.

Central drive mechanism for rotation of work piece is driven by a separate electric motor through a gear reducer. Front and rear slides, mounted on the right- and left-hand carriages are clamped to the bed.

Slides feed is hydraulic.

The machine is equipped with three electric motors.



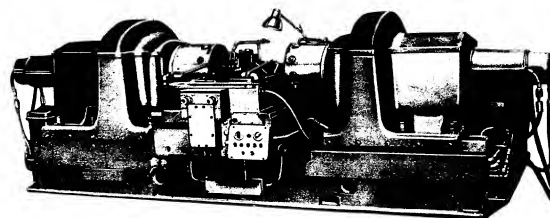


## SPECIFICATIONS

<b>Capacity</b>		Range of slides feed (hydraulic), mm/min. ....	1—84
Height of centers over bed, mm ....	350	Rapid traverse of slides, m/min. ....	1.0
Height of centers over carriage, mm ..	225		
Distance between centers, mm:		<b>Drive</b>	
minimum .....	750	220/380 volt, 3 phase, 50 cycle A.C. motors:	
maximum .....	1200	Main drive:	
<b>Center Drive</b>		power, kW .....	28
Diameter of hole in center drive for chuck mounting, mm .....	560	speed, r.p.m. ....	1500
<b>Slides</b>		Hydraulic feed:	
Maximum cross traverse of front and rear slides, mm .....	175	power, kW .....	3.5
		speed, r.p.m. ....	1000
		Coolant pump:	
		power, kW .....	0.65
		speed, r.p.m. ....	3000
<b>Speeds and Feeds</b>		<b>Space Occupied</b>	
Speed of central drive (change is by pick-off gears), r.p.m.:		Floor space, mm .....	3435X2035
minimum .....	22	Height of machine, mm .....	1680
maximum .....	56	<b>Weight</b>	
		Net weight, kg .....	approx. 10025

## MULTITool SEMI-AUTOMATIC CRANKSHAFT LATHE

MODEL 1A857



The 1A857 Semi-Automatic Crankshaft Lathe is designed for rough and finish turning, simultaneously two crankpins and their adjacent cheeks on crankshafts. Besides this, the machine can also be set-up for turning the main journals of crankshafts.

The machine operates on an automatic cycle, comprising: rapid tool approach, coarse, average and fine feed rates, rapid withdrawal of tool slides to their starting position at end of turning. Turning is effected with broad tools for cross feeds.

The working cycle is controlled by special electrical apparatus. During the cycle, feed rates and speeds are changed automatically.

The front and rear tool slides are mounted on the carriage, rigidly fastened to the bed of the machine.

The tool slides are fed hydraulically.

The machine is equipped with three electric motors.

## SPECIFICATIONS

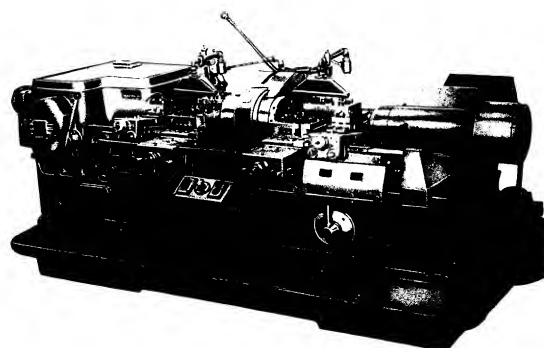
<b>Capacity</b>		rear .....	1
Height of centers, mm .....	470	Maximum cross travel, mm .....	210
Distance between centers, mm:			
maximum .....	1300		
minimum .....	760		
<b>Speeds and Feeds</b>			
Maximum diameter of work that can be machined, mm:		Range of spindle speeds, r.p.m. ....	8—48.5
over bed ways .....	425	Note: The spindle speed at the middle of the slide travel is doubled automatically.	
over carriage .....	210	Range of feeds (hydraulic), mm per revolution of spindle .....	0.05—1.5
<b>Tool Slides</b>			
Number of tool slides:			
front .....	1		



<b>Drive</b>		<b>Coolant pump:</b>	
220/380 volt, 3 phase, 50 cycle A.C. motors:		power, kW	
Main drive:		speed, r.p.m.	
power, kW	14	<b>Space Occupied</b>	
speed, r.p.m.	1500	Floor space, mm	4480×2210
Hydraulic feeds:		Height of machine, mm	1515
power, kW	2.8	<b>Weight</b>	
speed, r.p.m.	1000	Net weight, kg	approx. 12850

## MULTITool SEMI-AUTOMATIC CAMSHAFT LATHE

MODEL 1891



The 1891 Semi-Automatic Camshaft Lathe is a multitool machine designed for turning of journals and facing of cam sides (cheeks) on end parts of camshafts.

For each size of camshaft to be machined the machine has a special set-up and fully automatic cycle of operation.

The machine is equipped with front longitudinal and cross slides and with rear cross slides. Number of slides depends on the size of camshaft machined.

Central drive spindle is driven from a separate motor through Vee belts, pick-off gears through drive shaft and series of gears.

Feed movement is taken from an intermediate shaft and then through gears, overrunning clutch, worm and wheel, and drum type cam.

Working feed of cross slides is accomplished by means of flat cams mounted inside of slide supports.

Rapid traverse of front and rear slides (approach and return) is obtained from a separate motor through gears and overrunning clutch.

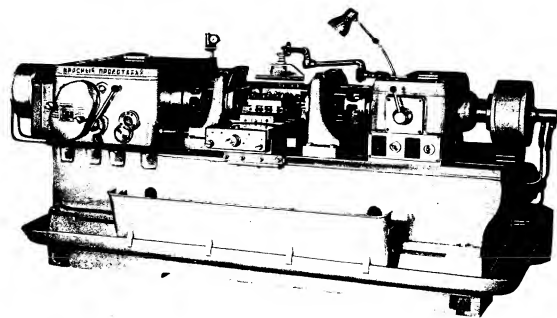


Automatic cycle of machine is controlled by means of electrical control device with operating disc, for one turn of which the machine goes through one full working cycle.

#### SPECIFICATIONS

<b>Capacity</b>	Maximum diameter of work piece, mm	82
Height of centers over bed, mm	Maximum length of turning with	
Distance between faces of headstock and footstock spindles, mm	longitudinal slide, mm	100
<b>Slides</b>		
	Front slides	Rear slides
	longitudinal	cross
Number of slides (according to set-up)	2	2
Size of surface for tool block clamping, mm	150×150	215×220
Distance from tool bottom to center line, mm	40	70
Distance from center line to tool block face, mm	50—82	50—100
Maximum traverse, mm:		35—85
longitudinal	115	—
cross	infed according to set-up	40
<b>Central Drive</b>		
Diameter of hole in drive chuck, mm	80	Rapid cross traverse of rear slide, m/min:
<b>Footstock</b>		
Taper of rotating center sleeve, Morse No. 5		approach 0.18
Maximum traverse of spindle (pneumatic), mm	100	return 0.73
<b>Speeds and Feeds</b>		
Number of spindle speeds	4	<b>Drive</b>
Spindle speeds, r.p.m.:		220/380 volt, 3 phase, 50 cycle A.C. motors:
minimum	80	Main drive:
maximum	153	power, kW 20
Feeds, mm per revolution of spindle:		speed, r.p.m. 1500
longitudinal 0.10; 0.13; 0.16; 0.20; 0.27		Slides rapid traverse:
cross 0.04; 0.05; 0.06; 0.07; 0.10		power, kW 1.7
Rapid traverse of front slides, m/min:		speed, r.p.m. 1500
longitudinal:		Coolant pump:
approach 0.42		power, kW 0.65
return 1.73		speed, r.p.m. 3000
cross:		
approach 0.33		<b>Space Occupied</b>
return 1.4		Floor space, mm 3010×1980
		Height of machine, mm 1550
		<b>Weight</b>
		Net weight, kg approx. 6675

#### MULTITOOL SEMI-AUTOMATIC CAMSHAFT LATHE MODEL 1892



The 1892 Semi-Automatic Camshaft Lathe is a multitool machine designed for turning of journals and facing of cam sides (cheeks) in a middle part of camshafts.

For each size of camshaft to be machined the machine has a special set-up and fully automatic cycle of operation.

The machine stops automatically.

Headstock spindle is driven from a separate motor through Vee belts, pick-off gears and two bevel gears with spiral teeth.

Footstock spindle is driven from headstock spindle through series of gears and drive shaft.

Change of spindle speeds as well as change of feeds is obtained through pick-off gears.

Feed movement is taken from an intermediate shaft and then through gears, overrunning clutch, worm and wheel and drum type cam.

Working feed of cross slides is accomplished by means of flat cams mounted inside of slide supports.

Rapid traverse of front and rear slides (approach and return) is obtained from a separate motor through gears and overrunning clutch. Automatic



cycle of machine is controlled by means of electrical control device with operating disc, for one turn of which the machine goes through one full working cycle.

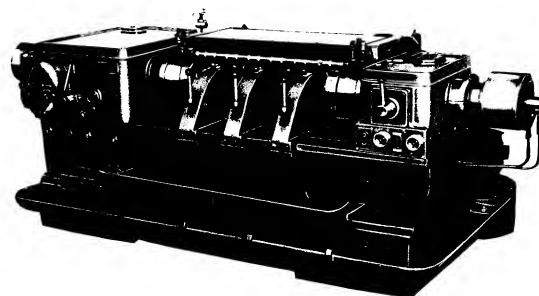
The machine is equipped with three motors.

#### SPECIFICATIONS

Capacity		Speeds and Feeds	
Height of centers over bed, mm	250	Number of spindle speeds	4
Distance between faces of headstock and footstock spindles, mm	1205	Speeds of spindle, r.p.m.:	
Maximum diameters of work machined over slide, mm	170	minimum	80
		maximum	153
<b>Slides</b>		Cross feeds of slides, mm per revolution of spindle	0.04; 0.05; 0.06; 0.07; 0.10
Working cross travel of front slide, mm	10	Rapid traverse of front slide, mm/min:	
Working cross travel of rear slide, mm	40	approach	0.33
Size of surface for tool block clamping, mm	215×325 250×325	return	1.4
Distance from tool bottom to center line, mm	70 60	Rapid traverse of rear slide, mm/min:	
Distance from center line to tool block face, mm	55—95 35—85	approach	0.18
Maximum cross travel, mm	60 40	return	0.73
<b>Headstock</b>		<b>Drive</b>	
Diameter of hole in spindle, mm	52	220-380 volt, 3 phase, 50 cycle A.C. motors:	
Taper in spindle	1 : 24	Main drive:	
<b>Footstock</b>		power, kW	14
Diameter of hole in spindle, mm	52	speed, r.p.m.	1500
Taper in spindle	1 : 24	Rapid traverse of slides:	
		power, kW	1.7
		speed, r.p.m.	1500
		Coolant pump:	
		power, kW	0.63
		speed, r.p.m.	3000
		<b>Space Occupied</b>	
		Floor space, mm	3440×1953
		Height of machine, mm	1370
		<b>Weight</b>	
		Net weight, kg	approx. 6400

### MULTITOOl SEMI-AUTOMATIC CAMSHAFT LATHE

MODEL 1893



The 1893 Semi-Automatic Camshaft Lathe is designed for simultaneously turning all the cams of camshaft.

For each size of camshaft to be machined, the machine has a special set-up.

The machine operates on a completely automatic cycle.

The profiles of cams are turned in two cuts (rough and finish).

Headstock spindle is driven from a separate motor through Vee belts, change gears and a pair of bevel gears with spiral teeth. The tailstock spindle is driven through a driving shaft and series of gears from the headstock spindle.

Change of spindle speeds as well as change of feeds are obtained through change gears.

The cutting tools are clamped in special swivelling tool holders, thereby insuring a constant cutting angle.

The required profile of the cams being turned is provided for by master camshaft and tool actuating camshaft, having a two-sided drive. Longitudinal travel of the carriage is accomplished from a cam drum.

The automatic cycle is controlled by an electrical control-unit with a cam disc, one turn of which corresponds to a full working cycle.

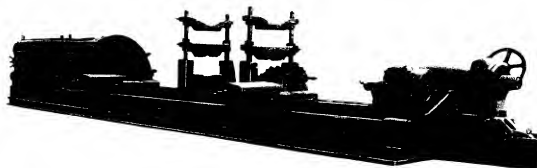


## SPECIFICATIONS

<b>Capacity</b>	
Height of centers over bed, mm	250
Maximum distance between faces of headstock and tailstock spindles, mm	1139
Maximum diameter of work that can be machined, mm	70
<b>Carriage</b>	
Maximum longitudinal travel of carriage, mm	30
Height from bottom of tool to line of centers, mm	12
Maximum size of cutting tool shank, mm	10×12
Cross infeed of tool, mm	1.5
<b>Headstock and Tailstock</b>	
Spindle bore diameter, mm	52
Taper of spindle bore	1:24
<b>Speeds and Feeds</b>	
Number of spindle speeds	4
Range of spindle speeds, r.p.m.:	
minimum	80
maximum	153
<b>Range of longitudinal feeds per revolution of spindle, mm:</b>	
0.08; 0.11; 0.16; 0.24	
<b>Rapid traverse of carriage (return), m/min.:</b>	
1.62	
<b>Drive</b>	
220/380 volt, 3 phase, 50 cycle A.C. motors:	
<b>Main drive:</b>	
power, kW	10
speed, r.p.m.	1500
<b>Rapid traverse of carriage:</b>	
power, kW	1.7
speed, r.p.m.	1500
<b>Coolant pump:</b>	
power, kW	0.65
speed, r.p.m.	3000
<b>Space Occupied</b>	
Floor space, mm	3440×1905
Height of machine, mm	1300
<b>Weight</b>	
Net weight, kg	approx. 8000

## ROLL TURNING LATHE

MODEL 1A947



The 1A947 Roll Turning Lathe is designed for rough and finish turning of rolls of rolling mills and other similar heavy works.

Machining is done by tools clamped in tool blocks of two slides. Longitudinal and cross feed of both slides is obtained through back gears and ratchet mechanism. Longitudinal feed engagement and disengagement is accomplished by means of feed screw split nuts.

Change of spindle speeds is made by headstock sliding gears.

The machine is supplied with three motors.

## SPECIFICATIONS

<b>Capacity</b>		<b>Maximum distance from tool block</b>	
Height of centers, mm	650	face to center line, mm	800
Distance between centers, mm	7000	Maximum size of tool shank, mm:	
Maximum diameter of work machined, mm	1250	width	270
Maximum length of work machined, mm	7000	height	100
<b>Slides</b>		Maximum travel of slides, mm:	
Number of slides	2	longitudinal	5500
Number of tool blocks on each slide	1	cross	350
<b>Speeds and Feeds</b>		<b>Number of spindle speeds</b>	
Distance from tool bottom to center line, mm	70	Number of spindle speeds	16
		Range of spindle speeds, r.p.m.	0.29—27.87



Range of slides feeds, mm per revolution of spindle:  
 longitudinal ..... 0.26—10.27  
 cross ..... 0.1—1.95

**Drive**

220/380 volt, 3 phase, 50 cycle A.C. motors:

Main drive:  
 power, kW ..... 28  
 speed, r.p.m. .... 1000

Rapid traverse:  
 power, kW ..... 2.8  
 speed, r.p.m. .... 1000

**Coolant pump:**

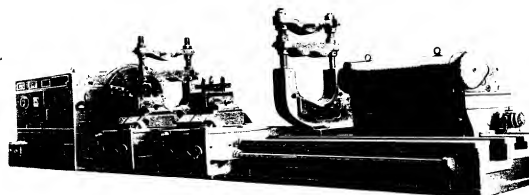
power, kW ..... 1.0  
 speed, r.p.m. .... 1500

**Space Occupied**

Floor space, mm ..... 12650×3180  
 Height of machine, mm ..... 2175

**Weight**

Net weight, kg ..... approx. 45000

**ROLL TURNING LATHE****MODEL 1827C**

The 1827C Roll Turning Lathe is designed for rough and finish turning as well as for sizing large rolling mill rolls.

The machine is equipped with two front and one rear saddles. The longitudinal and cross feeds of the saddles and slides are obtained through a feed gear box and feed rods.

The saddle longitudinal traverse is engaged or disengaged by means of couplings on the feed rods.

The spindle speed is changed by controlling the main drive adjustable speed D.C. motor and the headstock gear box.

Gear shifting is operated hydraulically.

The tailstock is equipped with a live center.

Independent motors are provided for saddle and tailstock rapid traverse.

The lathe is equipped with nine electric motors and push-button control.

**SPECIFICATIONS**

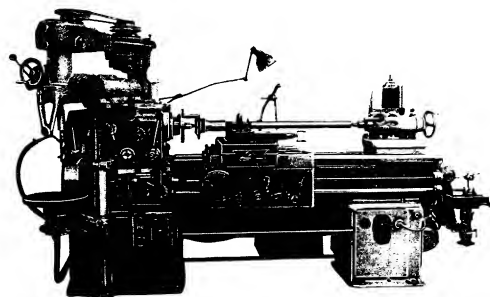
<b>Capacity</b>		Standard size of tool shank, mm . . 80×80	
Height of centers, mm	1000	<b>Steady Rests</b>	
Distance between centers, mm	6500	Number of closed steady rests	2
Maximum swing over bed ways, mm	1950	<b>Speeds and Feeds</b>	
Maximum swing over saddle, mm	1500	Range of spindle speeds, r.p.m.	1.0—64
Maximum turning length, mm	6500	Range of saddle feeds, mm per revolution of spindle:	
Maximum weight of work, tons	50	longitudinal	0.26—11.7
<b>Saddles</b>		cross	0.09—4.1
Number of saddles:			
front	2		
rear	1		



Speed of saddle rapid traverse, m/min.: longitudinal ..... 2.5 cross ..... 0.87	<b>Space Occupied</b> Floor space, mm ..... 14600×3960 Height of machine, mm ..... 3100
Speed of tailstock rapid traverse, m/min. .... 3	
<b>Drive</b> Main drive D.C. motor: power, kW ..... 100 speed, r.p.m. .... 300—1200	<b>Weight</b> Net weight (including electrical equip- ment and accessories), kg approx. 120000

## COMBINATION TURNING, MILLING AND DRILLING MACHINE

MODEL 1A95



The 1A95 Combination Turning, Milling and Drilling Machine is designed for turning, milling, drilling, boring, grinding, slotting and tool grinding operations. The machine comprises turning-milling and drilling-milling units and grinding, tool and cutter grinding and slotting attachments. The headstock is movable along the vertical ways of column, which is clamped to the bed.

At the top part of the headstock drilling and milling unit is mounted. When needed the slotting attachment is clamped to the front face of the headstock. Grinding attachment for internal and external grinding is mounted on the slide of carriage. The tool and cutter grinding attachment is clamped to the right part of machine. Drive of the turning-milling and drilling-milling units as well as grinding and tool and cutter grinding attachments is from separate motors.

Change of spindle speeds of the turning-milling unit is accomplished through operating levers of the headstock, and the drilling-milling unit—by means of belt changing of the pulley steps and by back gears.

The machine can be efficiently used in the repairing shops, on ships, etc.



## SPECIFICATIONS

## TURNING AND MILLING UNIT

Capacity		Speeds and Feeds	
Height of centers, mm	200—325	Number of spindle speeds	12
Maximum distance between centers, mm	1000	Range of spindle speeds, r.p.m.	23—1000
Bar capacity, mm	32	Threads that can be cut:	
Maximum diameter of work turning over lower part of the slide	420	Metric, pitch in mm	0.5—18
Maximum length of turning, mm	700	English, threads per inch	28—3
Spindle		Range of slide feeds, mm per revolution of spindle:	
Diameter of hole in spindle, mm	35	longitudinal	0.13—1.17
Taper hole in spindle	Morse No. 5	cross	0.07—0.65

## DRILLING AND MILLING UNIT

Sliding Table		Spindle	
Sliding table size, mm:		Maximum swivel of table around column, deg.	90
length	700	Spindle	
width	300	Maximum travel of spindle, mm	80
Maximum table traverse, mm:		Taper hole in spindle	Morse No. 3
longitudinal	820	Speeds	
cross	320	Number of spindle speeds	6
Drilling Table		Range of spindle speeds, r.p.m.	62—1118
Maximum diameter of drilling, mm	25	Attachments	
Diameter of table, mm	320	Slotting Attachment	
Vertical movement of table, mm	455	Length of ram stroke, mm	100

## ATTACHMENTS

Slotting Attachment		Tool Grinding Attachment	
Length of ram stroke, mm	100	Maximum diameter of grinding wheel, mm	100
Tool overhang from headstock, mm	300	Speed of grinding spindle, r.p.m.	5600
Size of hole for tool clamping, mm	25×17	Grinding Attachment	
Number of ram speeds	4	Maximum diameter of grinding wheel, mm	150
Range of ram speeds, strokes per minute	7—58	Speeds of grinding spindle, r.p.m.	3500 and 5700

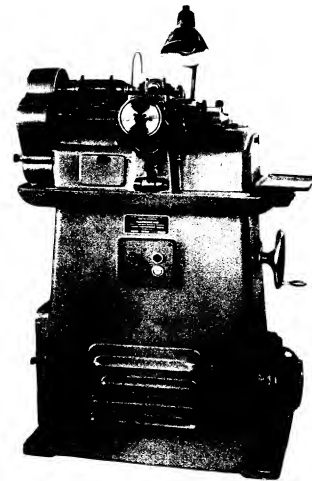
Machine Model	1A93 For sea use		1A9314 For general use	
	Direct Current Drive	Alternating Current Drive	Direct Current Drive	Alternating Current Drive
Drive				
Motors for:				
Turning and Milling Unit:				
power, kW	2.66	2.4	2.66	2.8
speed, r.p.m.	1500	1500	1500	1500
Drilling and Milling Unit:				
power, kW	0.71	0.75	0.71	1.0
speed, r.p.m.	2000	1500	2000	1500
Grinding and Tool Grinding Attachments:				
power, kW	0.65	0.6	0.65	1.0
speed, r.p.m.	2870	3000	2870	3000
Space Occupied				
Floor space, mm	2910×1290	2910×1290	2910×1290	2910×1290
Height of machine, mm	1785	1775	1785	1775
Weight				
Net weight, kg	approx. 2150	approx. 1900	approx. 2300	approx. 2050





## HOB RELIEVING LATHE

MODEL 1810



The 1810 Relieving Lathe is designed for relieving of fine pitch straight flute hobs.

The machine works on semi-automatic cycle. Operation of the machine is from one push-button station, all movements being performed automatically by means of stops and hydraulic mechanisms.

Interlocking devices make possible successive operation of the machine mechanisms and prevent their breakage.

Change of spindle speeds is made through the infinitely variable drive.

The machine is supplied with rapid return mechanism.

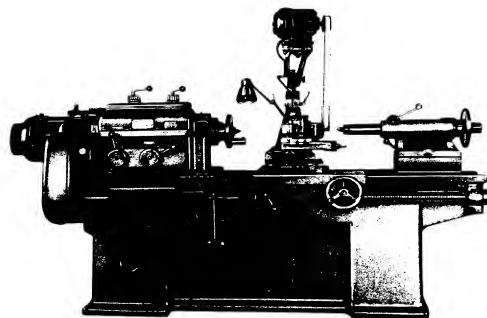


## SPECIFICATIONS

Capacity		Speeds and Feeds	
Maximum distance from face of spindle to supporting (back) center, mm ..	65	Range of spindle speeds (infinitely variable), r.p.m. ....	3.2—24.4
Maximum diameter of work machined, mm ..	40	Range of relieving slide feed, mm per one stroke .....	0.0025—0.05
Maximum length of machining, mm ..	50	Drive	
Module of hobs relieved:		Two-speed main drive motor:	
minimum .....	0.03	power, kW .....	0.5/1.5
maximum .....	0.8	speeds, r.p.m. ....	750/3000
Number of teeth of hobs relieved .....	8, 9, 10, 12, 14, 15	Space Occupied	
Spindle		Floor space, mm .....	880×600
Taper hole in spindle .....	Morse No. 2	Height of machine, mm .....	1400
Slide		Weight	
Maximum travel of relieving slide, mm ..	2.8	Net weight, kg .....	approx. 470
Pitch of lead screws, modules ..	0.25; 0.5; 1		

## UNIVERSAL RELIEVING LATHE

### MODEL 96



The 96 Universal Relieving Lathe is designed for relieving (with tool or grinding wheel) of teeth of different cutters on the outside diameter and face as well as for relieving of different cams, taps and reamers.

Besides different screw-cutting works may be done on this machine.

Change of spindle speeds is accomplished by means of headstock.

Threads of different type, number of flutes and spiral are obtained through pick-off gears.

Cross movement of slide is by hand only.

Relieving motion is also tripped during the rapid traverse of cross slide back to the starting position.

Relieving with grinding wheel is made by special attachments mounted on the machine. Spindle of grinding wheel is driven from a separate motor.



## SPECIFICATIONS

Capacity		Headstock	
Height of centers, mm	280	Diameter of hole in spindle, mm	25
Maximum distance between centers, mm	800	Taper hole in spindle	Morse No. 5
Maximum swing over slide, mm	290	Tailstock	
Maximum relieving length, mm	560	Taper hole in spindle	Morse No. 5
Thread that can be cut		Maximum travel of spindle, mm	270
Metric pitch in mm	0.5—240	Setover on side, mm	plus 18; minus 12
English, threads per inch	60—0.1	Speeds and Feeds	
Module	0.5—80	Number of spindle speeds	8
Pitch of spiral when relieving, mm:		Range of spindle speeds, r.p.m.:	
minimum	200	forward	4.5—49
maximum	6000	reverse	9—98
Slide		Drive	
Traverse of slide during relieving, mm	0.25—22	220/380 volt, 3 phase, 50 cycle A.C. motor:	
Maximum size of tool shank, mm	58×50	Main drive (two-speed):	
Maximum traverse of slide, mm:		power, kW	2.0/3.0
longitudinal (power and hand)	560	speed, r.p.m.	750/1500
cross (hand)	100	Grinding wheel:	
		power, kW	0.6
		speed, r.p.m.	3000
Tool Slide		Space Occupied	
Maximum traverse of slide, mm:		Floor space, mm	3020×1080
longitudinal	80	Height of machine, mm	1830
cross	100	Weight	
Maximum tool slide swivel, deg.	290	Net weight, kg	approx. 2800

VSESOJUZNOJE EXPORTNO-IMPORTNOJE OBJEDINENIJE

## "STANKOIMPORT"

## EXPORTS AND IMPORTS:

Machine Tools  
 Woodworking Machinery  
 Metal Working Machinery (Presses, Hammers, Shears, Cold Forming Machines, Punching Machines)  
 Rolling Mills (imports)  
 Measuring Instruments and Apparatus (for metal industry)  
 Testing Machines and Instruments (for metals)  
 Optical Instruments and Equipment  
 Portable Electric and Pneumatic Tools (for metal and wood-working)  
 Metal and Wood Cutting Tools  
 Mechanic's Tools and Chucks  
 Sintered Carbide and Hard-Alloy Products  
 Abrasive Products  
 Ball and Roller Bearings  
 Microscopes of all types  
 Motion-Picture Equipment and Accessories  
 Geodetic Instruments and Equipment  
 Photographic Cameras  
 Binoculars  
 Magnifiers  
 Lenses  
 Crude Optical Glass Blocks and Blanks

Design and specifications of the Machine Tools illustrated herein are subject to change without notice.

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## SPECIFICATIONS

Capacity		Headstock	
Height of centers, mm	280	Diameter of hole in spindle, mm	25
Maximum distance between centers, mm	800	Taper hole in spindle	Morse No. 5
Maximum swing over slide, mm	230	Tailstock	
Maximum relieving length, mm	560	Taper hole in spindle	Morse No. 5
Thread that can be cut:		Maximum travel of spindle, mm	270
Metric, pitch in mm	0.5—2.49	Setover on side, mm	plus 18; minus 12
English, threads per inch	60—0.1	Speeds and Feeds	
Module	0.5—80	Number of spindle speeds	8
Pitch of spiral when relieving, mm:		Range of spindle speeds, r.p.m.:	
minimum	200	forward	4.5—49
maximum	6000	reverse	9—68
Slide		Drive	
Traverse of slide during relieving, mm	0.25—22	220/380 volt, 3 phase, 50 cycle A.C. motor:	
Maximum size of tool shank, mm	58×50	Main drive (two-speed):	
Maximum traverse of slide, mm:		power, kW	2.0/3.0
longitudinal (power and hand)	560	speed, r.p.m.	750/1500
cross (hand)	100	Grinding wheel:	
		power, kW	0.6
		speed, r.p.m.	3000
Tool Slide		Space Occupied	
Maximum traverse of slide, mm:		Floor space, mm	3020×1080
longitudinal	80	Height of machine, mm	1830
cross	100	Weight	
Maximum tool slide swivel, deg.	±90	Net weight, kg	approx. 2800

VSESOJUZNOJE EXPORTNO-IMPORTNOJE OBJEDINENIJE

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 Rolling Mills (imports)  
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 Testing Machines and Instruments (for metals)  
 Optical Instruments and Equipment  
 Portable Electric and Pneumatic Tools (for metal and wood-working)  
 Metal and Wood Cutting Tools  
 Mechanic's Tools and Chucks  
 Sintered Carbide and Hard-Alloy Products  
 Abrasive Products  
 Ball and Roller Bearings  
 Microscopes of all types  
 Motion-Picture Equipment and Accessories  
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